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August 1, 2011
Project No. 0086-10-11-79-01

John Sadlier, MC-172
Office of Compliance and Enforcement
Texas Commission on Environmental Quality
12100 Park 35 Circle
Austin, Texas 78753

Re: Performance Test Report for 3 IC Engines (NSPS Subpart JJJJ and 30 TAC 117)
Westside RDF Landfill Gas-To-Energy Facility
TCEQ Account No. TA-3161-T
RN 101991925 CN 600127856
Standard Permit Registration No. 81820
Tarrant County, Texas

Dear Mr. Sadlier:

On behalf of our client, Waste Management of Texas, Inc. (WM), Weaver Boos Consultants, LLC-Southwest (WBC) is submitting a copy of the completed Performance Test report to the Texas Commission on Environmental Quality (TCEQ) for the three internal combustion (IC) engines at the Westside Recycling and Disposal Facility's (RDF) Landfill Gas-to-Energy (LFGTE) Facility. The performance testing was conducted to comply with the New Source Performance Standards (NSPS) Subpart JJJJ requirements in 40 CFR §60.4243 and the periodic testing requirements in Title 30 Texas Administrative Code (30 TAC) §117.8140(a).

WM Renewable Energy, LLC (WMRE) owns and operates the landfill gas-to-energy (LFGTE) facility at the Westside RDF. The site has an active landfill gas collection and control system that operates throughout the landfill. The LFG extracted from the landfill is routed to the LFGTE facility that includes three internal combustion (IC) generator engines. The emissions from the generator engines are authorized under Standard Permit No. 81820 issued on June 25, 2007 and revised on November 21, 2008 and October 22, 2009. The three Caterpillar 3520 IC generator engines are non-certified and as such, are subject to the performance testing requirements in 40 CFR §60.4243(a)(2)(iii). In addition, as per Title 30 Texas Administrative Code (30 TAC) §117.8140(a)(2), engines are required to be retested for NO_x and CO emissions on a biennial basis or within 15,000 hours of operation after the previous emission test.

The three engines were tested for NO_x, CO, and VOC emissions on June 6 and 7, 2011 by RMC Environmental, Inc., in accordance with 40 CFR §60.4244, 30 TAC §117.8140(a) and §117.8010 regarding compliance stack test reports and §117.8000 (Stack Testing Requirements). The enclosed Performance Testing report summarizes the results from the testing and provides the additional required reference material (e.g., testing procedures and methods, analytical techniques, data and calculations, chain of custody, etc.). The

Mr. John Sadlier
August 1, 2011
Page 2

results of the performance test determined that the engines comply with the NSPS Subpart JJJJ requirements and continue to comply with the site's Standard Permit and 30 TAC §117.410(b). Please note that this testing also satisfies the 16,000 hours re-certification requirements in the Standard Permit's General Requirements 4(G) and the 15,000 hours re-testing requirement in (30 TAC) §117.8140(a)(2).

A summary of the specific emission rates measured from the performance test for the engines is provided in the following Table.

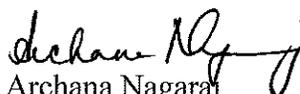
**Engine Performance Test Results,
Operating Hours, and Estimated Next Sampling**

Engine Facility Identification Number (FIN)	NO _x Emission Rate (g/BHP-Hr)	CO Emission Rate (g/BHP-Hr)	VOC Emission Rate (g/BHP-Hr)	Recorded Operating Hours From Previous 04/2010 Emission Test to 06/2011 Emission Test	Estimated Date of Next Required Sampling
ENG01	0.48	2.22	0.05	7,996	06/05/2012
ENG02	0.38	2.08	0.15	7,866	06/05/2012
ENG03	0.51	2.58	0.02	8,074	06/05/2012

In accordance with 30 TAC §117.8140(a)(2)(B)(ii), the site is also required to submit documentation of the actual recorded hours of operation for each engine (since the previous emission test) and an estimate of the date of the next required sampling. This information is provided in the above Table. Please note that the approximate date for the next testing to be performed is based 8,760 hours of operation of the engine.

If you have any questions regarding the enclosed performance test report, please call.

Sincerely,
Weaver Boos Consultants, LLC-Southwest


Archana Nagaraj
Air Quality Manager

Attachment: Performance Testing prepared by RMC Environmental, Inc.

cc: Alyssa Taylor, TCEQ – Region 4
Paula Carboni, Waste Management of Texas, Inc.
Vic Saufley, Waste Management Renewable Energy, LLC
Andrew Shafer, P.E., Waste Management of Texas, Inc.
Matt K. Stutz, P.E., Weaver Boos Consultants, LLC-Southwest

ANNUAL PERFORMANCE TEST

June 2011

As Defined By

Title 40 Code of Federal Regulations Part 60, Subpart JJJJ, Standard Permit for Electric Generating Units, and 30 TAC 117.440 (h)

RMCEINC Project #2011-15969

**WASTE MANAGEMENT OF TEXAS, INC.
WESTSIDE RECYCLING AND DISPOSAL FACILITY
ENGINE PLANT
FORT WORTH, TEXAS**

THREE CATERPILLAR 3520 INTERNAL COMBUSTION ENGINES

**PREPARED FOR:
WASTE MANAGEMENT OF TEXAS, INC.
Waste Management Renewable Energy**

BY:

RMC ENVIRONMENTAL, INC. -- CHICAGO REGIONAL OFFICE

REPORT CERTIFICATION

The sampling, analysis, and data collection performed for this report were carried out under my direction and supervision, and I hereby certify that the test report is authentic and accurate, to the best of my knowledge.

Date 7/23/11

Signature 

Rachel Chleborowicz
Project Manager
RMC ENVIRONMENTAL, INC.

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1.0 PROJECT INFORMATION

1.1 Company Information

Name and Address: Waste Management of Texas, Inc.
Westside Recycling and Disposal Facility (RDF)
12280 Camp Bowie Blvd
Fort Worth, Texas 76102

Contact: Mr. Andrew Schaffer

Telephone Number: 713-772-9100

Source Tested: Three IC Engines – Landfill Gas Treatment / Electric Generating Plant

1.2 Testing Firm Information

Name and Address: RMC ENVIRONMENTAL, INC.
9226 North 2nd Street
Machesney Park, Illinois 61115

Contact: Rachel Chleborowicz

Telephone Number: 815-378-6150 Mobile 815-425-1102 Fax
RMCE@AirMonitoring.com / RMCEInc@aol.com

1.3 Test Information

Test Requested By: Waste Management of Texas, Inc.

Source Contact: Mr. Phil Keim

Telephone Number: 817-751-5218

Test Objective: Title 40, Code of Federal Regulations, Part 60, Subpart JJJ, Compliance and Performance Testing, Title V Permit testing & 30 TAC § 440(h).

Test Methods: EPA Methods 1-4, 3A, 7E, 10 and 25A/18

Test Dates: June 6 & 7, 2011

Source Test Coordinators: Mr. Phil Keim Waste Management of Texas, Inc.

Test Personnel: Rachel Chleborowicz RMCEInc
Andrew McDermid RMCEInc

Laboratory Analysis: Core Laboratories

2.0 SOURCE IDENTIFICATION

Name and Address: Waste Management of Texas, Inc.
Westside Recycling and Disposal facility
12280 Camp Bowie Blvd
Fort Worth, Texas 76102

Contact: Mr. Phil Keim

Telephone Number: 817-751-5218

Source Tested: Three IC Engines – Landfill Gas Treatment / Electric Generating Plant

Fuel: Landfill Gas
 Duct Dimensions: Height 12' ID ~15"
 Sampling Location: ~36" Downstream and ~42" Upstream from any flow disturbance

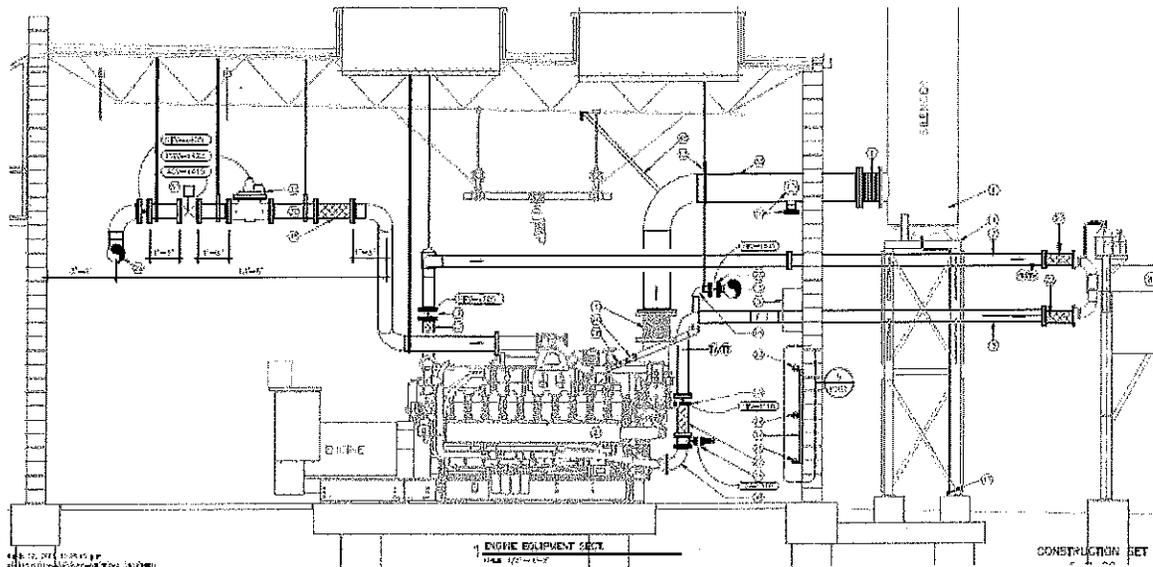
- Senior Project Manager works directly with the site coordinator and the facility's operators during the testing to coordinate the testing. They are also responsible for operating and monitoring the instrumental test methods within the mobile test laboratory.
- The Site Coordinator is the facility's representative for the test program.

2.1 Facility Description, Process Information, and Emission Source Description

The Westside RDF consists of a municipal solid waste landfill and associated support systems and structures. Landfill gas is collected and then combusted by three (3) landfill gas-fired (LFG) Caterpillar 3520 engines/electric generator sets and a flare system. The landfill gas extraction system consists of gas extraction wells, which are spaced across the surface of the landfill. The wells are interconnected by a subsurface manifold system, which traverses the landfill. Each landfill gas extraction well is outfitted with a valve allowing the flow of gas to be individually controlled. The landfill gas collection system is equipped with centrifugal blowers, which feed the flare. The engine generators receive landfill gas through a set of compressor units.

Figure 2.1-1 is a diagram of the engine showing the exhaust to the silencer and the ports used for testing.

Figure 2.1-1 – Engine Schematic / Diagram.



Stack Information

	Westside – Engines
Shape of the test plane	Round
Internal diameter	15"
Source sampling system approximate height (AGL)	~ 15'
Reference Flow Sampling Ports (Est. Offset from North)	45° & 135°

An EPA Method 1 data sheet for the engines is included in **Figure 5.11-1**. These and all measurements provided before the test team arrives on site were verified and included in the appendices to this report.

3.0 SUMMARY AND DISCUSSION OF RESULTS

The compliance testing results for Waste Management of Texas, Inc. – Westside RDF are shown in **Table 3-1**. The indicated pollutants are VOC/NMOC, CO and NO_x emissions in unit of the emission rate (lb/BHP-Hr). The reference test data are enclosed in **Appendices A & B** and the corresponding process data collected from the engine operations screen and the on-site Gas Chromatograph (GC) are included in **Appendix D**.

This data is an average of the three one-hour test runs conducted on each engine. Each engine is rated for 2,233 horsepower with ~1600 Kw of power produced. The testing was conducted at those levels.

TABLE 3-1. COMPLIANCE TEST RESULTS
June 6 & 7, 2011

Parameter	Result ¹	Permit Limit
Engine #1 – 6/6/11 (EPN/FIN: ENG01)		
Engine #1 – NO _x g/BHP-Hr	0.48	30 TAC 117 - 0.6 g NO _x / BHP-Hr Subpart JJJ Specification - 3.0 g NO _x /BHP-Hr
NO _x lb/Mw-Hr	1.46	Standard Permit - 1.9 lb/Mw-Hr
Engine #1 – CO g/BHP-Hr	2.22	30 TAC 117 - 3.0 g CO / BHP-Hr Subpart JJJ Specification - 5.0 g CO/BHP-Hr
Engine #1 – VOC g/BHP-Hr	0.05	Subpart JJJ Specification - 1.0 g VOC/BHP-Hr
Engine #2 – 6/6/11 (EPN/FIN: ENG02)		
Engine #2 – NO _x g/BHP-Hr	0.38	30 TAC 117 - 0.6 g NO _x / BHP-Hr Subpart JJJ Specification - 3.0 g NO _x /BHP-Hr
NO _x lb/Mw-Hr	1.16	Standard Permit - 1.9 lb/Mw-Hr
Engine #2 – CO g/BHP-Hr	2.08	30 TAC 117 - 3.0 g CO / BHP-Hr Subpart JJJ Specification - 5.0 g CO/BHP-Hr
Engine #2 – VOC g/BHP-Hr	0.15	Subpart JJJ Specification - 1.0 g VOC/BHP-Hr
Engine #3 – 6/7/11 (EPN/FIN: ENG03)		
Engine #3 – NO _x g/BHP-Hr	0.51	30 TAC 117 - 0.6 g NO _x / BHP-Hr Subpart JJJ Specification - 3.0 g NO _x /BHP-Hr
NO _x lb/Mw-Hr	1.57	Standard Permit - 1.9 lb/Mw-Hr
Engine #3 – CO g/BHP-Hr	2.58	30 TAC 117 - 3.0 g CO / BHP-Hr Subpart JJJ Specification - 5.0 g CO/BHP-Hr
Engine #3 – VOC g/BHP-Hr	0.02	Subpart JJJ Specification - 1.0 g VOC/BHP-Hr

¹The procedures and calculations outlined in 40 CFR 60.4244 were followed for this test project.

4.0 POLLUTANTS AND TEST METHODS

Pollutant Tested:	NO _x	EPA Method 7E – Title 40 CFR 60, Appendix A
	CO	EPA Method 10 – Title 40 CFR 60, Appendix A
	VOC/NMOC	EPA Method 25A/18 – Title 40 CFR 60 Appendix A

5.0 TEST PROCEDURES AND RESULTS

5.1 Sampling Procedures

Testing was completed per EPA Test Methods 1, 2, 3A, 4, 7E, 10 and 25A/18 defined in Title 40 CFR Part 60, Appendix A.

5.10 Volumetric Flow Rates

RMCEINC determined the number and location of the traverse points for volumetric flow rate measurement according to the procedures outlined in EPA Method 1. When determining the location and number of sample points, RMCEINC took into account the number of sample ports, duct configuration, and location of upstream and downstream flow disturbances. **Figures 5.10-1** illustrates the EPA Methods 1-4 Sampling train used for this testing. **Figure 5-2** presents the EPA Method 1 data sheets illustrating the port locations and the points used for each Method 2 traverse.

The flue gas velocity and volumetric flow rate were determined according to the procedures of EPA Method 2. A Type S pitot tube with a Type K thermocouple was used to measure velocity pressure and stack gas temperature at each sample point. Each pitot tube conformed to the geometric specifications of EPA Method 2 and was assigned a coefficient of 0.84. An umbilical cord connected the pitot tube to the meter box inclined manometer and digital temperature readout. RMCEINC leak-checked the pitot tube prior to and after conducting the traverse.

RMCEINC determined the flue gas composition and molecular weight using EPA Methods 3A and 4 procedures.

Figure 5.11-2 – EPA Methods 1-4 Sampling Train Schematic / Diagram.

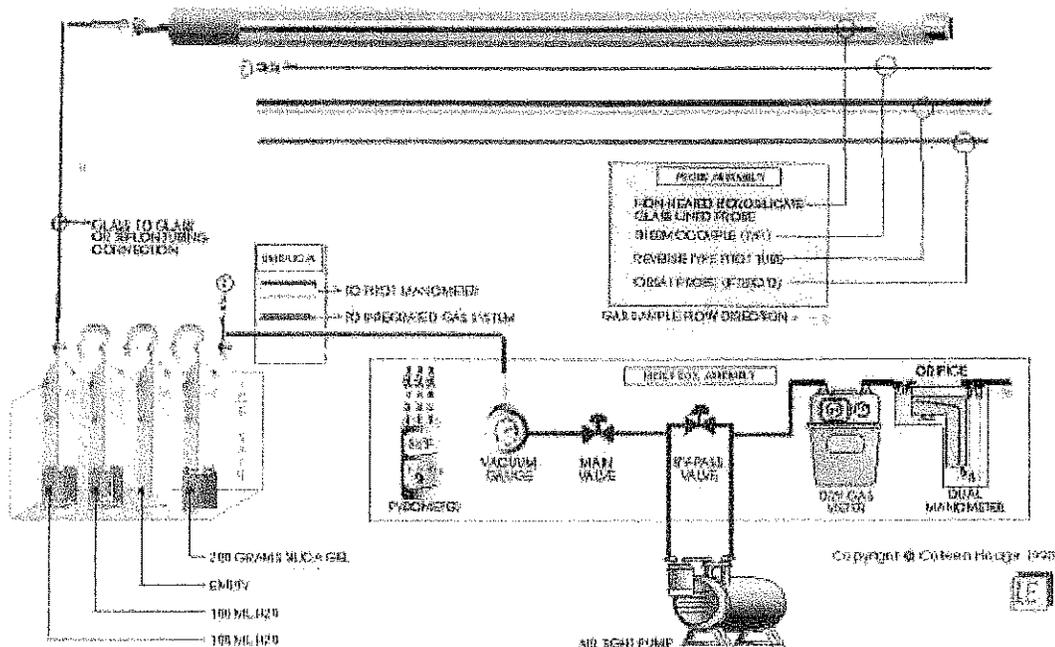
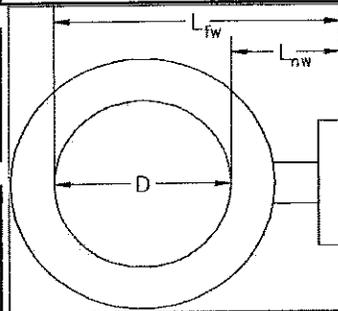


Figure 5-2 – EPA Method 1 Data – Engines 1-3

METHOD 1 - SAMPLE AND VELOCITY TRAVERSES FOR CIRCULAR SOURCES				
Plant Name	Westside RDF		Date	06/06/11
Sampling Location	Engines 1-3		Project #	2011-15969
Operator	AMD		# of Ports Available	2
Stack Type	Circular		# of Ports Used	2
Stack Size	Small		Port Inside Diameter	3

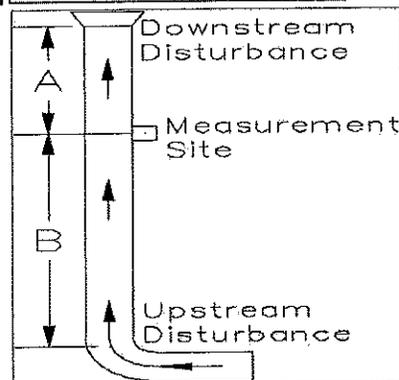
Circular Stack or Duct Diameter			
Distance to Far Wall of Stack	(L_{fw})	24.00	in
Distance to Near Wall of Stack	(L_{nw})	8.50	in
(= $L_{fw} - L_{nw}$) Diameter of Stack	(D)	15.50	in
(= $3.14(D^2/4)$) Area of Stack	(A_s)	1.31	ft ²



Distance from Port to Disturbances			
Distance Upstream	(B)	36.00	in
(= B/D) Diameters Upstream	(B_D)	2.32	diameters
Distance Downstream	(A)	42.00	in
(= A/D) Diameters Downstream	(A_D)	2.71	diameters

Number of Traverse Points Required			
Diameters to Flow Disturbance		Minimum Number of ¹ Traverse Points	
Up Stream	Down Stream	Particulate Points	Velocity Points
2.00-4.99	0.50-1.24	24	16
5.00-5.99	1.25-1.49	20	16
6.00-6.99	1.50-1.74	16	12
7.00-7.99	1.75-1.99	12	12
>= 8.00	>=2.00	8 or 12 ²	8 or 12 ²
Upstream Spec		24	16
Downstream Spec		8	8
Traverse Pts Required		24	16

¹ Check Minimum Number of Points for the Upstream and Downstream conditions, then use the largest.
² 8 for Circular Stacks 12 to 24 inches
12 for Circular Stacks over 24 inches



Number of Traverse Points Used			
2	Ports by	8	Across
16	Pts Used	16	Required
<input type="checkbox"/>	Particulate	<input checked="" type="checkbox"/>	Velocity

Location of Traverse Points in Circular Stacks						
Traverse Point Number	Number of Traverse Points on a Diameter					
	2	4	6	8	10	12
1	.146	.067	.044	.032	.026	.021
2	.854	.250	.146	.105	.082	.067
3		.750	.296	.194	.146	.118
4		.933	.704	.323	.226	.177
5			.854	.677	.342	.280
6			.956	.806	.658	.356
7				.895	.774	.644
8				.968	.854	.750
9					.918	.823
10					.974	.882
11						.933
12						.979

Traverse Point Locations			
Traverse Point Number	Fraction of Stack Diameter	Distance from Inside Wall	Distance Including Nipple Length
		in	in
1	0.032	4/8	9
2	0.105	1 5/8	10 1/8
3	0.194	3	11 4/8
4	0.323	5	13 4/8
5	0.677	10 4/8	19
6	0.806	12 4/8	21
7	0.895	13 7/8	22 3/8
8	0.968	15	23 4/8
9			
10			
11			
12			

5.11 Instrumental Test Equipment and Procedures

The test program includes the measurement of exhaust gas concentrations of CO, NO_x and O₂. RMCEINC used the procedures that conform to the requirements of Title 40 CFR, Part 60, Appendix A, Methods 1, 2, 3A, 4, 7E and 10. Each of the three test runs included a minimum of one hour of continuous flue gas sampling.

Concentration measurements of O₂, CO, NO_x and VOC/NMOC, were made according to EPA Methods 3A, 7E, 10 and 25A/18 using the analyzers listed in Table 5.11-1. Figure 5.12-1 is a schematic of the wet/dry extractive reference measurement gas sampling system used by RMCEINC. All components of the sampling system that contact the sample are stainless steel, glass, or Teflon.

A sampling probe provides a method of drawing a continuous sample of flue gases. The probe assembly is temperature controlled to maintain the sample above the dew point and includes a calibration value and sample filter. A temperature controlled Teflon umbilical connects the probe assembly to an ice bath condenser. The condenser is equipped with a condensate discharge pump to continuously remove the condensate from the condenser traps. The dried sample is then transported to the mobile laboratory's sample manifold.

Before the moisture removal system, a portion of the wet effluent is diverted to the THC analyzer. This analyzer requires the sample to be unconditioned which allows for the full THC concentration in the sample to be analyzed. In order to obtain VOC / NMOC concentrations, an onsite, inline GC measured the methane concentrations real-time. The methane concentration was then subtracted from the total THC concentration to provide an NMOC result.

TABLE 5.11-1 REFERENCE METHOD ANALYZERS

Parameter	Analyzer	Analytical Technique	Instrument Span
NO _x	Thermo Environmental Instruments Model 42	Chemiluminescence	0-250, ppm
CO	Thermo Environmental Instruments Model 48	Gas Filter Correlation	0-1000, ppm
VOC / NMOC	VID Industries Model 220/200	FID / GC	0-1000/5000 ppm
O ₂	Teledyne - 3300 or Servomex 1440	Fuel Cell / Paramagnetic	0-21 %

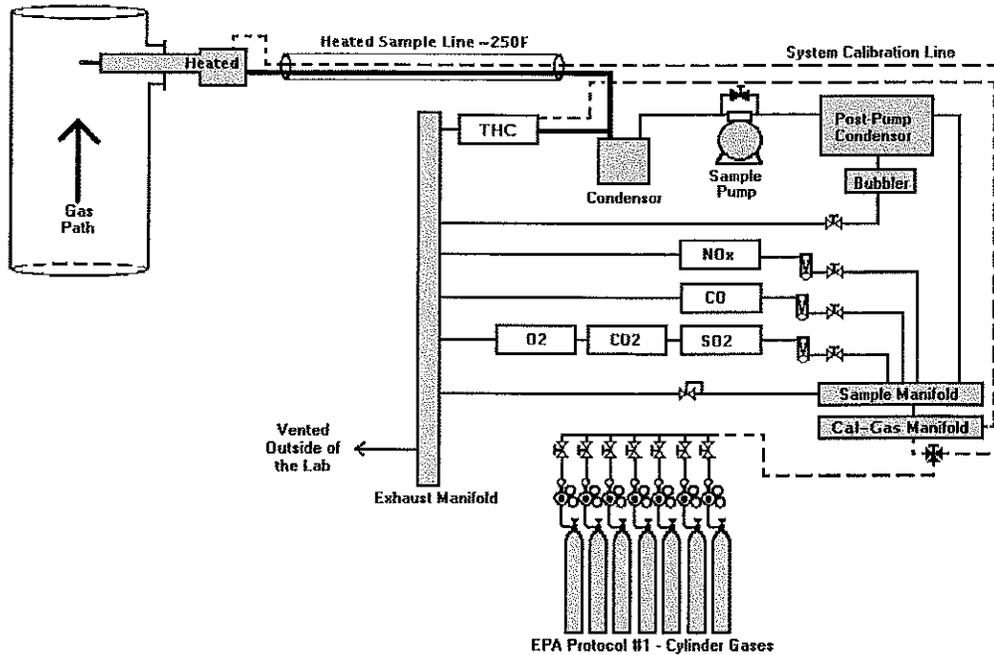
5.12 Instrumental Analytical Data

RMCEINC performed test runs to measure the flue gas for VOC/NMOC, NO_x and CO in terms of an emission rate (lb/BHP-Hr). A three-point (zero, mid-range, and high-range) analyzer calibration error check on each reference analyzer was performed before initiating the testing. This check is conducted after final calibration adjustments are made by injecting the calibration gases directly into each gas analyzer and recording the responses on the reference data acquisition system.

RMCEINC conducts zero and upscale calibration checks both before and after each test run in order to quantify measurement system calibration drift and sampling system bias. Upscale is either the low-, mid- or high-range gas, whichever most closely approximates the flue gas level. During these checks, the calibration gases are introduced into the sampling system through a 3-way valve assembly at the probe outlet so that the calibration gases are analyzed in the same manner as the flue gas samples.

RMCEINC recorded the reference analyzer measurements as 1-minute and 60-minute averages on its DAS. All test run concentration results were determined from the average gas concentrations measured during the run and adjusted based on the zero and upscale sampling system bias check results (Equation 7E-1 presented in Title 40 CFR Part 60, Method 7E, Section 8). The reference VOC/NMOC, CO and NO_x emission values in terms of pounds per hour and grams per break horsepower hour were computed from each test run average of adjusted, dry basis VOC/NMOC, CO, NO_x and percent O₂ using the Title 40 CFR Part 60 Appendix A Method 19.

Figure 5.12-1. Reference Method Gas Sampling System Diagram



6.0 EQUIPMENT CALIBRATION AND QUALITY ASSURANCE

RMCEINC followed the calibration and quality assurance procedures of EPA Methods 1, 2, 3A, 4, 7E, 10 and 25A/18 throughout the test program. The maintenance for our meterboxes, probes, analyzers and a majority of our other test equipment is performed off site by either Clean Air Engineering or Millenium Instruments. These companies ensure that our equipment is operating correctly and within the specification of the respective methods. All equipment is calibrated in accordance with the EPA Methods and guidelines.

The results of sampling system bias and calibration drift tests for each test run are calculated and presented in the test report. Cylinder gases used during the testing are certified to meet or exceed EPA Protocol 1 requirements. The meter box calibrations, pitot tube inspections, calibration gas certificates of analysis and the analyzer quality assurance checks are included in **Appendix C**.

RMCEINC uses computers throughout the test program. Spreadsheets and software programs are checked in our office for accuracy. Software used by RMCEINC is structured to eliminate human errors in data entry where possible by automating the process. When possible RMCEINC, inputs field data directly into the DAS system and eliminates the hand written field data sheets. These systems provide an accurate measurement of the raw test data and are not used to modify or change test data in any manner. Equations used in these systems are taken directly from the CFR when possible, and notations are provided if originated from an alternate source or customized in any manner.

APPENDIX A. TEST SUMMARY SHEETS

Emissions Summary

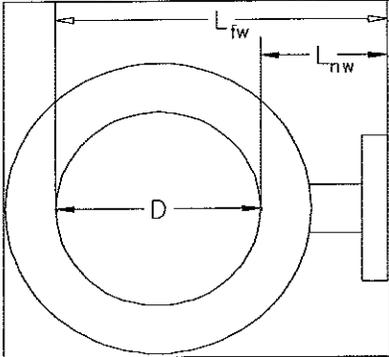
APPENDIX B. FIELD TEST DATA W/ INSTRUMENTAL TEST DATA

Method 1-4 Field Data
Flow Rate Determinations
Calibration Summaries
Instrumental Test Run Data
Reference Data Summary

METHOD 1 - SAMPLE AND VELOCITY TRAVERSES FOR CIRCULAR SOURCES

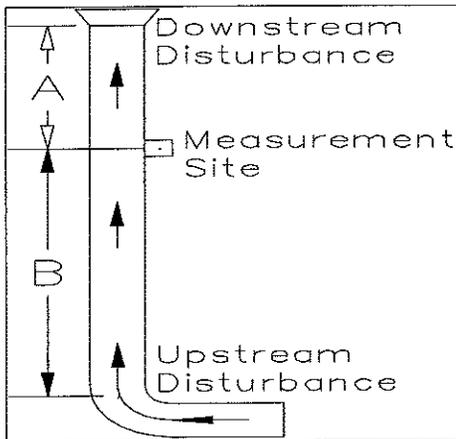
Plant Name	Westside Recycling & Disposal Facility	Date	06/06/11
Sampling Location	Engines 1-3	Project #	2011-15969
Operator	AMD	# of Ports Available	2
Stack Type	Circular	# of Ports Used	2
Stack Size	Small	Port Inside Diameter	3

Circular Stack or Duct Diameter			
Distance to Far Wall of Stack	(L_{fw})	24.00	in
Distance to Near Wall of Stack	(L_{nw})	8.50	in
(= $L_{fw} - L_{nw}$) Diameter of Stack	(D)	15.50	in
(= $3.14(D/2/Cunits)^2$) Area of Stack	(A_s)	1.31	ft ²



Distance from Port to Disturbances			
Distance Upstream	(B)	36.00	in
(= B/D) Diameters Upstream	(B_D)	2.32	diameters
Distance Downstream	(A)	42.00	in
(= A/D) Diameters Downstream	(A_D)	2.71	diameters

Number of Traverse Points Required			
Diameters to Flow Disturbance		Minimum Number of ¹ Traverse Points	
Up Stream	Down Stream	Particulate Points	Velocity Points
2.00-4.99	0.50-1.24	24	16
5.00-5.99	1.25-1.49	20	16
6.00-6.99	1.50-1.74	16	12
7.00-7.99	1.75-1.99	12	12
≥ 8.00	≥ 2.00	8 or 12 ²	8 or 12 ²
Upstream Spec		24	16
Downstream Spec		8	8
Traverse Pts Required		24	16



¹ Check Minimum Number of Points for the Upstream and Downstream conditions, then use the largest.
² 8 for Circular Stacks 12 to 24 inches
 12 for Circular Stacks over 24 inches

Number of Traverse Points Used			
2	Ports by	8	Across
16	Pts Used	16	Required
<input type="checkbox"/>	Particulate	<input checked="" type="checkbox"/>	Velocity

Location of Traverse Points in Circular Stacks						
Traverse Point Number	(Fraction of Stack Diameter from Inside Wall to Traverse Point)					
	Number of Traverse Points on a Diameter					
	2	4	6	8	10	12
1	.146	.067	.044	.032	.026	.021
2	.854	.250	.146	.105	.082	.067
3		.750	.296	.194	.146	.118
4		.933	.704	.323	.226	.177
5			.854	.677	.342	.250
6			.956	.806	.658	.356
7				.895	.774	.644
8				.968	.854	.750
9					.918	.823
10					.974	.882
11						.933
12						.979

Traverse Point Locations			
Traverse Point Number	Fraction of Stack Diameter	Distance from Inside Wall	Distance Including Nipple Length
		in	in
1	0.032	4/8	9
2	0.105	1 5/8	10 1/8
3	0.194	3	11 4/8
4	0.323	5	13 4/8
5	0.677	10 4/8	19
6	0.806	12 4/8	21
7	0.895	13 7/8	22 3/8
8	0.968	15	23 4/8
9			
10			
11			
12			

VOLUMETRIC FLOW RATE DETERMINATION

Company: Waste Management of Texas
 Source: Westside Landfill - 3520 Cat Engines
 Test Location: Engine #1

Load: > 90%
 Run: 2
 Start Time: 6/6/2011 10:30
 End Time: 6/6/2011 11:30

Conducted By: AM/RC

TEST DATA

Test Point	Delta P (in H2O)	Temp. (Deg F)	Test Point	Delta P (in H2O)	Temp. (Deg F)
A-1	3.600	938	B-5	4.000	936
A-2	4.400	938	B-6	2.900	936
A-3	3.600	939	B-7	3.500	938
A-4	4.400	939	B-8	4.000	939
A-5	4.600	939			
A-6	3.200	939			
A-7	3.300	938			
A-8	3.200	936			
B-1	3.400	935			
B-2	3.000	937			
B-3	4.900	937			
B-4	3.900	936			

Duct Area: 176.7 (A) sq. inches
 Barometric Pressure: 30.02 (Pbar) inches Hg
 Static Pressure: -2.10 (Pg) inches H2O
 Pitot Tube Coefficient: 0.84 (Cp)
 Percent O2: 8.3 % O2
 Percent CO2: 11.9 % CO2
 Percent Nitrogen: 79.9 % N2
 Percent Moisture: 12.5 % H2O
 Average Delta P: 3.74 inches H2O
 Root Mean Sq. Delta P: 3.72 (Pavg) inches H2O
 Mean Temperature: 937.5 (Ts) Degrees F

Number Of Traverse Points: 16

CALCULATIONS

DRY MOLE FRACTION OF STACK GAS: $Mfd = 1 - (\%H_2O / 100)$

Mfd = 0.875

ABSOLUTE STACK GAS PRESSURE: $Ps = Pbar + (Pg / 13.6)$

Ps = 29.87 in. Hg

DRY MOLECULAR WEIGHT OF STACK GAS: $Md = 0.44 (\%CO_2) + 0.32 (\%O_2) + 0.28 (\%N_2)$

Md = 30.23 lb/lb-mole

WET MOLECULAR WEIGHT OF STACK GAS: $Ms = (Md)(Mfd) + 0.18 (\%H_2O)$

Ms = 28.70 lb/lb-mole

AVERAGE STACK GAS VELOCITY: $Vs = 85.49(Cp) X \{(Pavg)(Ts + 460) / [(Ps)(Ms)]\}^{-0.5}$

Vs = 176.9 ft/sec

DRY VOLUMETRIC FLOW RATE: $Qsd = 7.353(60)(Mfd)(Vs)(A)(Ps) / (Ts + 460)$

Qsd = 4,298 DSCFM (DRY)

WET VOLUMETRIC FLOW RATE: $Qsw = Qsd / Mfd$

Qaw = 4,912.4 SCFM (WET)

METHOD 4 RUN SUMMARY SHEET

Company: Waste Management of Texas
Source: Westside Landfill - 3520 Cat Engines
Test Location: Engine #2 **Load:** > 90%

Run:	M4-R1	M4-R2	M4-R3
Flow Runs:	1	2	3
Start Time:	06/06/11 20:57	06/06/11 22:10	06/06/11 23:25
End Time:	06/06/11 21:57	06/06/11 23:10	06/07/11 0:25

RUN DATA

Meter voume start (cu. ft.):	770.025	792.903	816.968
Meter volume finish (cu. ft.):	792.201	816.396	840.381
Meter calib. factor (Y):	0.9940	0.9940	0.9940
Barometric pressure (in. Hg):	29.96	29.96	29.96
Average Delta-H (in. H2O):	1.84	1.84	1.84
Gas meter temperature (deg F):	111.0	115.0	117.0
Sil-Gel total wt. H2O collected (grams):	5.1	5.4	3.4
Impinger total volume H2O collected (ml):	55	60	62

CALCULATED RESULTS

Gas volume sampled (DSCF)*:	20.494	21.560	21.412
Water vapor volume (SCF)*:	2.829	3.078	3.078
Moisture content (% volume):	12.1	12.5	12.6

* 68 deg F (20 deg C) - 29.92 in. Hg

VOLUMETRIC FLOW RATE DETERMINATION

Company: Waste Management of Texas
 Source: Westside Landfill - 3520 Cat Engines
 Test Location: Engine #2

Load: > 90%
 Run: 1
 Start Time: 6/6/2011 20:57
 End Time: 6/6/2011 21:57

Conducted By: AM/RC

TEST DATA

Test Point	Delta P (in H2O)	Temp. (Deg F)	Test Point	Delta P (in H2O)	Temp. (Deg F)
A-1	4.000	918	B-5	3.800	919
A-2	4.100	919	B-6	3.500	918
A-3	4.300	916	B-7	4.000	918
A-4	3.600	915	B-8	3.600	918
A-5	3.200	917			
A-6	3.700	917			
A-7	3.100	917			
A-8	3.100	918			
B-1	3.000	917			
B-2	3.000	918			
B-3	3.700	917			
B-4	4.100	918			

Duct Area: 176.7 (A) sq. inches
 Barometric Pressure: 29.96 (Pbar) inches Hg
 Static Pressure: -4.70 (Pg) inches H2O
 Pitot Tube Coefficient: 0.84 (Cp)
 Percent O2: 8.2 % O2
 Percent CO2: 11.7 % CO2
 Percent Nitrogen: 80.0 % N2
 Percent Moisture: 12.1 % H2O
 Average Delta P: 3.61 inches H2O
 Root Mean Sq. Delta P: 3.60 (Pavg) inches H2O
 Mean Temperature: 917.5 (Ts) Degrees F

Number Of Traverse Points: 16

CALCULATIONS

DRY MOLE FRACTION OF STACK GAS: $Mfd = 1 - (\%H_2O / 100)$

Mfd = 0.879

ABSOLUTE STACK GAS PRESSURE: $Ps = Pbar + (Pg / 13.6)$

Ps = 29.61 in. Hg

DRY MOLECULAR WEIGHT OF STACK GAS: $Md = 0.44 (\%CO_2) + 0.32 (\%O_2) + 0.28 (\%N_2)$

Md = 30.21 lb/lb-mole

WET MOLECULAR WEIGHT OF STACK GAS: $Ms = (Md)(Mfd) + 0.18 (\%H_2O)$

Ms = 28.73 lb/lb-mole

AVERAGE STACK GAS VELOCITY: $Vs = 85.49(Cp) X \{(Pavg)(Ts + 460) / [(Ps)(Ms)]\}^{0.5}$

Vs = 173.4 ft/sec

DRY VOLUMETRIC FLOW RATE: $Qsd = 7.353(60)(Mfd)(Vs)(A)(Ps) / (Ts + 460)$

Qsd = 4,256 DSCFM (DRY)

WET VOLUMETRIC FLOW RATE: $Qsw = Qsd / Mfd$

Qaw = 4,843.6 SCFM (WET)

VOLUMETRIC FLOW RATE DETERMINATION

Company: Waste Management of Texas
 Source: Westside Landfill - 3520 Cat Engines
 Test Location: Engine #2

Load: > 90%
 Run: 3
 Start Time: 6/6/2011 23:25
 End Time: 6/7/2011 0:25

Conducted By: AM/RC

TEST DATA

Test Point	Delta P (in H2O)	Temp. (Deg F)	Test Point	Delta P (in H2O)	Temp. (Deg F)
A-1	3.400	933	B-5	3.600	936
A-2	4.100	933	B-6	3.800	935
A-3	4.600	936	B-7	3.000	935
A-4	3.800	936	B-8	2.800	935
A-5	4.100	936			
A-6	3.700	935			
A-7	3.200	934			
A-8	2.800	935			
B-1	4.900	931			
B-2	4.200	933			
B-3	4.600	932			
B-4	4.000	934			

Duct Area: 176.7 (A) sq. inches
 Barometric Pressure: 29.96 (Pbar) inches Hg
 Static Pressure: -4.60 (PG) inches H2O
 Pitot Tube Coefficient: 0.84 (Cp)
 Percent O2: 8.0 % O2
 Percent CO2: 11.9 % CO2
 Percent Nitrogen: 80.1 % N2
 Percent Moisture: 12.6 %H2O
 Average Delta P: 3.79 inches H2O
 Root Mean Sq. Delta P: 3.76 (Pavg) inches H2O
 Mean Temperature: 934.3 (Ts) Degrees F

Number Of Traverse Points: 16

CALCULATIONS

DRY MOLE FRACTION OF STACK GAS: $Mfd = 1 - (\%H_2O / 100)$

Mfd = 0.874

ABSOLUTE STACK GAS PRESSURE: $Ps = Pbar + (Pg / 13.6)$

Ps = 29.62 in. Hg

DRY MOLECULAR WEIGHT OF STACK GAS: $Md = 0.44 (\%CO_2) + 0.32 (\%O_2) + 0.28 (\%N_2)$

Md = 30.22 lb/lb-mole

WET MOLECULAR WEIGHT OF STACK GAS: $Ms = (Md)(Mfd) + 0.18 (\%H_2O)$

Ms = 28.69 lb/lb-mole

AVERAGE STACK GAS VELOCITY: $Vs = 85.49(Cp) X \{(Pavg)(Ts + 460) / [(Ps)(Ms)]\}^{-0.5}$

Vs = 178.4 ft/sec

DRY VOLUMETRIC FLOW RATE: $Qsd = 7.353(60)(Mfd)(Vs)(A)(Ps) / (Ts + 460)$

Qsd = 4,306 DSCFM (Dry)

WET VOLUMETRIC FLOW RATE: $Qsw = Qsd / Mfd$

Qaw = 4,925.1 SCFM (WET)

VOLUMETRIC FLOW RATE DETERMINATION

Company: Waste Management of Texas
 Source: Westside Landfill - 3520 Cat Engines
 Test Location: Engine #3

Load: > 90%
 Run: 2
 Start Time: 6/7/2011 9:15
 End Time: 6/7/2011 10:15

Conducted By: AM/RC

TEST DATA

Test Point	Delta P (in H2O)	Temp. (Deg F)	Test Point	Delta P (in H2O)	Temp. (Deg F)
A-1	3.600	933	B-5	3.000	934
A-2	3.800	933	B-6	4.000	934
A-3	4.700	933	B-7	3.100	933
A-4	4.300	933	B-8	2.600	933
A-5	4.000	933			
A-6	3.800	932			
A-7	3.600	931			
A-8	3.000	931			
B-1	3.700	932			
B-2	4.000	932			
B-3	4.400	932			
B-4	3.600	935			

Duct Area: 176.7 (A) sq. inches
 Barometric Pressure: 29.82 (Pbar) inches Hg
 Static Pressure: -3.50 (PG) inches H2O
 Pitot Tube Coefficient: 0.84 (Cp)
 Percent O2: 8.0 % O2
 Percent CO2: 12.0 % CO2
 Percent Nitrogen: 80.0 % N2
 Percent Moisture: 11.8 % H2O
 Average Delta P: 3.70 inches H2O
 Root Mean Sq. Delta P: 3.68 (Pavg) inches H2O
 Mean Temperature: 932.8 (Ts) Degrees F

Number Of Traverse Points: 16

CALCULATIONS

DRY MOLE FRACTION OF STACK GAS: $Mfd = 1 - (\%H_2O / 100)$

Mfd = 0.882

ABSOLUTE STACK GAS PRESSURE: $Ps = Pbar + (Pg / 13.6)$

Ps = 29.56 in. Hg

DRY MOLECULAR WEIGHT OF STACK GAS: $Md = 0.44 (\%CO_2) + 0.32 (\%O_2) + 0.28 (\%N_2)$

Md = 30.24 lb/lb-mole

WET MOLECULAR WEIGHT OF STACK GAS: $Ms = (Md)(Mfd) + 0.18 (\%H_2O)$

Ms = 28.80 lb/lb-mole

AVERAGE STACK GAS VELOCITY: $Vs = 85.49(Cp) X \{(Pavg)(Ts + 460)/[(Ps)(Ms)]\}^{-0.5}$

Vs = 176.2 ft/sec

DRY VOLUMETRIC FLOW RATE: $Qsd = 7.353(60)(Mfd)(Vs)(A)(Ps) / (Ts + 460)$

Qsd = 4,284 DSCFM (DRY)

WET VOLUMETRIC FLOW RATE: $Qsw = Qsd / Mfd$

Qaw = 4,859.5 SCFM (WET)

CEM Traverse Points

Company: Waste Management of Texas

Date: 6/6-7/11

Sampling Location: Engs 1-3 - Engine Plant

Project #: 2011-15969

	Stratification	N		Select Short Traverse	Y
Stack Dia. (in)	Nipple (in)	Wet Scrubber	N	<i>SHORT Traverse not allowed</i>	
24	8.5	Two Gas Streams	N		
		Dia. < 2.4 Meters	Y		

STANDARD TRAVERSE MEASUREMENTS

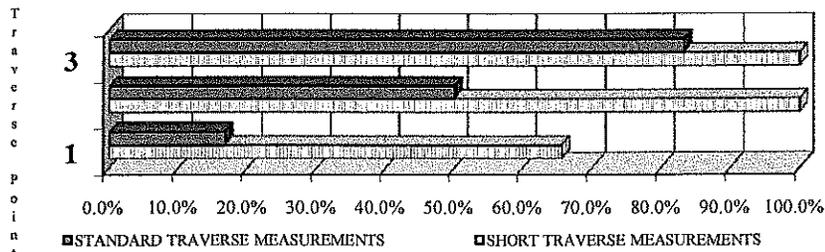
Traverse Points	Requirement Dist. from Inside Wall	Length (ft-in)
1	16.7%	1' 0-2/4"
2	50.0%	1' 8-2/4"
3	83.3%	2' 4-2/4"

SHORT TRAVERSE MEASUREMENTS

Traverse Points	Requirement Dist. from Inside Wall	Length (ft-in)
1	0.4 m	
2	1.2 m	
3	2.0 m	

STANDARD Traverse Used

Distance of Traverse Points From Inside Wall



Calibration Error Test at Run 1 . STRATA Version 2.01

Operator: RMC Environmental, Inc.
 Plant Name: Packaging Corp of America
 Location: Boiler #8

Reference Cylinder Numbers

	Zero	Low-range	Mid-range	High-range
O2-I	XC019453B		CC58514	CC147760
CO2-I	XC019453B		CC58514	CC147760
CO-I	CC58514	CC329890	XC019453B	CC186299

Date/Time	6/2/2011	12:31:59	PASSED
Analyte	O2-I	CO2-I	CO-I
Units	%	%	ppm
Zero Ref Cyl	0.00	0.00	0.00
Zero Avg	0.30	0.16	-0.60
Zero Error%	1.40	0.90	0.00
Low Ref Cyl			255.00
Low Avg			219.60
Low Error%			1.80
Mid Ref Cyl	12.56	9.98	500.00
Mid Avg	12.84	9.90	501.10
Mid Error%	1.30	0.40	0.10
High Ref Cyl	20.85	16.98	1004.00
High Avg	20.68	17.13	966.30
High Error%	0.80	0.80	1.90

Test Run 1 Begin. STRATA Version 2.01

Operator: RMC Environmental, Inc.

Plant Name: WM- West Side Landfill

Location: Engine Testing

		O2-1	CO2-1	CO-1	NOx-1	VOC-1	CH4-1
		%	%	ppm	ppm	ppm	ppm
Begin calculating run averages							
6/6/2011	9:16:10	8.52	11.513	574.44	82.36	553.6	1732.9
6/6/2011	9:17:09	8.523	11.513	568.94	82.83	556.5	2419.7
6/6/2011	9:18:09	8.511	11.526	572.71	84.67	552	1755.8
6/6/2011	9:19:08	8.489	11.546	573.85	84.52	550.9	1749.6
6/6/2011	9:20:10	8.492	11.547	574.44	84.8	555.9	1978.8
6/6/2011	9:21:09	8.497	11.543	578.37	86.31	553.7	1908.2
6/6/2011	9:22:09	8.515	11.528	572.3	84.88	553.6	1895.6
6/6/2011	9:23:08	8.512	11.53	571.43	83.69	553	1119.5
6/6/2011	9:24:10	8.498	11.543	573.67	84.99	552.6	1858
6/6/2011	9:25:09	8.492	11.552	575.5	85.29	557.8	1936.6
6/6/2011	9:26:09	8.514	11.536	572.89	84.66	559.1	1912.9
6/6/2011	9:27:08	8.504	11.544	569.59	83.25	553.7	1901.9
6/6/2011	9:28:08	8.51	11.541	573.32	84.5	559.6	1910
6/6/2011	9:29:10	8.529	11.523	571.48	85.35	556.2	1912.6
6/6/2011	9:30:09	8.533	11.518	569.97	84.9	560.3	1089.3
6/6/2011	9:31:09	8.536	11.518	571.16	84.79	563.5	1814.7
6/6/2011	9:32:08	8.544	11.51	568.53	83.85	557.5	1864.9
6/6/2011	9:33:10	8.532	11.518	569.09	83.55	556.1	1873.8
6/6/2011	9:34:09	8.506	11.539	574.03	84.94	552.9	1870.3
6/6/2011	9:35:09	8.533	11.519	577.31	86.6	554.5	1861.3
Begin Traverse							
6/6/2011	9:36:08	8.552	11.512	568	82.71	560.4	1845.4
6/6/2011	9:37:10	8.579	11.506	565.64	81.97	551.1	1085.5
6/6/2011	9:38:09	8.567	11.531	563.73	80.38	546.9	1816.3
6/6/2011	9:39:09	8.553	11.545	569.19	81.26	546.4	1825.5
6/6/2011	9:40:08	8.542	11.562	574.57	83.83	543.5	1830.9
6/6/2011	9:41:10	8.561	11.551	578.96	87.52	538.2	1679.3
6/6/2011	9:42:09	8.586	11.533	574.88	86.93	531.9	1678.2
6/6/2011	9:43:09	8.633	11.501	569.96	85.08	549.4	991.4
6/6/2011	9:44:08	8.594	11.533	561.23	81.06	531.6	1754.3
6/6/2011	9:45:08	8.59	11.533	573.36	83.92	542.7	1797.3
6/6/2011	9:46:10	8.579	11.547	575.65	84.31	532.8	1758.8
6/6/2011	9:47:09	8.615	11.53	572.62	83.63	539.1	1791.9
6/6/2011	9:48:09	8.643	11.538	569.39	82.33	535.3	1757.1
6/6/2011	9:49:08	8.596	11.558	573.18	83.22	535.5	1755.1
6/6/2011	9:50:10	8.589	11.555	577.01	85.34	541.2	1394.2
6/6/2011	9:51:09	8.606	11.556	576.98	84.43	538.1	2183.5
6/6/2011	9:52:09	8.635	11.532	575.14	84.56	539.8	2166.4
6/6/2011	9:53:08	8.647	11.537	568.22	82.27	548.3	2196.7
6/6/2011	9:54:10	8.657	11.541	570.78	82.8	540.3	2179

Final System Bias Check for Run 1 . STRATA Version 2.01

Operator: RMC Environmental, Inc.
 Plant Name: WM- West Side Landfill
 Location: Engine Testing
 Reference Cylinder Numbers
 Zero Span
 O2-1 XC019453B CC58514
 CO2-1 XC019453B CC58514
 CO-1 CC58514 CC38682
 NOx-1 CC58514 CC186299
 VOC-1 CC58514 CC157060
 CH4-1 CC58514 ALM033374

Date/Time	6/6/2011 10:22:30 PASSED					
Analyte	O2-1	CO2-1	CO-1	NOx-1	VOC-1	CH4-1
Units	%	%	ppm	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00	0.00	0.00
Zero Cal	0.41	0.12	2.75	4.28	2.10	58.00
Zero Avg	0.57	0.16	0.63	8.15	5.30	33.60
Zero Bias%	0.80	0.30	0.20	1.50	0.30	0.50
Zero Drift%	0.10	0.20	0.00	-0.10	0.60	0.40
Span Ref Cyl	12.56	9.98	499.40	115.60	500.40	2540.00
Span Cal	12.61	9.85	499.47	118.15	508.60	2520.30
Span Avg	12.84	9.71	489.55	120.06	493.10	2517.10
Span Bias%	1.10	0.70	1.10	0.80	1.60	0.10
Span Drift%	1.00	0.00	0.00	1.80	-0.60	-0.40
Ini Zero Avg	0.56	0.14	0.93	8.32	-0.70	14.80
Ini Span Avg	12.63	9.71	489.21	115.63	498.70	2539.10
Run Avg	8.58	11.53	571.17	82.93	541.00	1812.10
Co	0.56	0.15	0.78	8.24	2.30	24.20
Cm	12.73	9.71	489.38	117.85	495.90	2528.10
Correct Avg	8.27	11.88	583.01	78.77	546.20	1812.00

6/6/2011	11:11:20	8.599	11.47	567.4	81.02	541.2	1683
6/6/2011	11:12:19	8.654	11.459	567.54	81.52	542.9	1657.7
6/6/2011	11:13:21	9.045	11.466	565.51	79.5	533.1	1411.1
6/6/2011	11:14:20	9.043	11.449	569.22	82.04	548.7	1579.5
6/6/2011	11:15:20	9.159	11.453	564.52	80.63	538.1	1660
6/6/2011	11:16:19	8.846	11.476	560.78	78.49	525.6	1578.9
6/6/2011	11:17:19	8.69	11.484	567.24	80.64	523.1	1570.8
6/6/2011	11:18:19	8.957	11.51	573.87	83.08	523.7	1441.3
6/6/2011	11:19:21	9.115	11.512	576.41	83.8	527.5	1570.2
6/6/2011	11:20:20	9.213	11.509	573.65	82.93	522.6	1630.2
6/6/2011	11:21:20	8.559	11.546	582.4	86.69	509.4	1587.1
6/6/2011	11:22:19	8.534	11.503	582.26	88.22	530.8	1618.8
6/6/2011	11:23:19	8.551	11.48	570.15	83.81	527.6	1481
6/6/2011	11:24:20	8.556	11.471	566.44	82.88	538.3	1661.8
6/6/2011	11:25:20	8.546	11.481	567.44	83.06	533.3	1635.4
6/6/2011	11:26:19	8.541	11.483	568.76	83.72	533.4	1642.4
6/6/2011	11:27:19	8.526	11.495	570.19	83.86	525.5	1441.1
6/6/2011	11:28:20	8.529	11.493	573.96	85.39	535	1596.6
6/6/2011	11:29:20	8.513	11.503	570.54	84.43	528	1617.2
6/6/2011	11:30:20	8.533	11.485	574.51	86.14	529.5	1652.7
Average of Test Run		O2-1	CO2-1	CO-1	NOx-1	VOC-1	CH4-1
		%	%	ppm	ppm	ppm	ppm
6/6/2011	11:30:20	8.627	11.5	569.68	81.86	535.4	1778.1
Test Run 2 End							

Test Run 3 Begin. STRATA Version 2.01

Operator: RMC Environmental, Inc.

Plant Name: WM- West Side Landfill

Location: Engine Testing

		O2-1	CO2-1	CO-1	NOx-1	VOC-1	CH4-1
		%	%	ppm	ppm	ppm	ppm
Begin calculating run averages							
6/6/2011	11:46:11	8.563	11.446	571.27	76.53	557.4	1901.3
6/6/2011	11:47:10	8.545	11.462	570.61	75.95	556.7	1905.9
6/6/2011	11:48:10	8.544	11.469	568.91	76.01	550.1	1970.1
6/6/2011	11:49:09	8.565	11.454	569.75	75.8	554.2	1940.9
6/6/2011	11:50:10	8.578	11.443	563.8	74.61	554.3	1851.7
6/6/2011	11:51:09	8.579	11.442	562.18	75.5	556	1598.1
6/6/2011	11:52:09	8.585	11.437	563.52	74.93	558.8	1795.9
6/6/2011	11:53:11	8.552	11.462	563.37	75.18	554.7	1551.1
6/6/2011	11:54:10	8.55	11.456	566.26	75.62	544.1	1926.5
6/6/2011	11:55:10	8.552	11.46	569.03	77.02	550.1	1693.3
6/6/2011	11:56:09	8.562	11.443	574.78	79.08	542.3	1859
6/6/2011	11:57:11	8.577	11.438	567.54	77.21	555.7	1974.9
6/6/2011	11:58:10	8.569	11.442	569.82	78.03	543.7	1657.9
6/6/2011	11:59:10	8.562	11.447	565.09	76.76	544	1918.8
6/6/2011	12:00:09	8.563	11.444	566.18	76.33	541.9	1692
6/6/2011	12:01:11	8.571	11.444	566.57	76.27	545.7	1892.8
6/6/2011	12:02:11	8.579	11.436	565.04	75.7	540.3	1991.8
6/6/2011	12:03:10	8.598	11.425	568.57	77.54	543.5	1667.2
6/6/2011	12:04:10	8.593	11.43	564.94	75.95	535.1	1957
6/6/2011	12:05:11	8.612	11.413	566.47	76.97	541.6	1667.7
6/6/2011	12:06:11	8.602	11.415	565.27	76.48	543	1996.2
6/6/2011	12:07:10	8.585	11.431	568.54	77.16	539.8	1938.3
6/6/2011	12:08:10	8.568	11.442	570	78.41	536.4	1679.7
6/6/2011	12:09:09	8.588	11.438	571.64	79.55	533.9	1983.2
6/6/2011	12:10:11	8.575	11.456	567.73	77.51	535.4	1631.3
6/6/2011	12:11:10	8.557	11.472	571.54	78.26	537.5	1883.8
6/6/2011	12:12:10	8.57	11.453	570.17	78.34	532	1669.6
6/6/2011	12:13:09	8.581	11.442	569.37	78.68	537.1	1962.4
6/6/2011	12:14:11	8.583	11.438	562.23	75.44	548	1801.5
6/6/2011	12:15:11	8.565	11.454	564.23	76.93	541	1735.4
6/6/2011	12:16:10	8.55	11.464	573.86	80.3	529.7	1909
6/6/2011	12:17:10	8.565	11.449	574.58	81.12	543.2	1617.3
6/6/2011	12:18:11	8.602	11.423	564.05	78.62	548.9	1978.3
6/6/2011	12:19:11	8.589	11.432	559.03	76.34	542.7	1630.7
6/6/2011	12:20:10	8.587	11.433	560.75	77.28	553.6	1978.7
6/6/2011	12:21:10	8.554	11.455	564.71	77.78	542.8	1650.8
6/6/2011	12:22:10	8.552	11.456	572.39	79.82	539.6	1954.2
6/6/2011	12:23:10	8.556	11.444	573.49	80.57	510.7	1819.2
6/6/2011	12:24:11	8.59	11.423	567.95	78.74	519.6	1747.9
6/6/2011	12:25:11	8.61	11.433	558.36	75.06	521.4	1939.7

Final System Bias Check for Run 3 . STRATA Version 2.01

Operator: RMC Environmental, Inc.
 Plant Name: WM- West Side Landfill
 Location: Engine Testing

Reference Cylinder Numbers

	Zero	Span
O2-1	XCO19453B	CC58514
CO2-1	XCO19453B	CC58514
CO-1	CC58514	CC38682
NOx-1	CC58514	CC186299
VOC-1	CC58514	CC157060
CH4-1	CC58514	ALM033374

Date/Time	6/6/2011 12:56:34 PASSED					
Analyte	O2-1	CO2-1	CO-1	NOx-1	VOC-1	CH4-1
Units	%	%	ppm	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00	0.00	0.00
Zero Cal	0.41	0.12	2.75	4.28	2.10	58.00
Zero Avg	0.55	0.15	-0.10	10.66	5.30	9.50
Zero Bias%	0.70	0.20	0.30	2.60	0.30	1.00
Zero Drift%	0.00	0.10	0.00	0.20	0.10	0.10
Span Ref Cyl	12.56	9.98	499.40	115.60	500.40	2540.00
Span Cal	12.61	9.85	499.47	118.15	508.60	2520.30
Span Avg	12.64	9.68	485.51	118.29	503.80	2429.80
Span Bias%	0.20	0.90	1.60	0.10	0.50	1.80
Span Drift%	-0.10	-0.10	-0.10	0.40	0.50	-1.60
Ini Zero Avg	0.55	0.14	-0.04	10.25	4.20	5.20
Ini Span Avg	12.66	9.70	486.05	117.39	499.30	2509.10
Run Avg	8.62	11.44	568.16	77.82	534.80	1793.70
Co	0.55	0.14	-0.07	10.46	4.80	7.40
Cm	12.65	9.69	485.78	117.84	501.50	2469.50
Correct Avg	8.38	11.81	584.08	72.52	533.90	1808.70

Test Run 4 Begin. STRATA Version 2.01

Operator: RMC Environmental, Inc.

Plant Name: WM- West Side Landfill

Location: Engine Testing

		O2-1	CO2-1	CO-1	NOx-1	VOC-1	CH4-1
		%	%	ppm	ppm	ppm	ppm
Begin calculating run averages							
6/6/2011	20:58:15	8.508	11.485	533.54	59.38	570.9	1849.1
6/6/2011	20:59:14	8.492	11.484	533.9	60.69	548.2	1616.3
6/6/2011	21:00:14	8.479	11.47	533.61	62.47	541.3	1883.7
6/6/2011	21:01:13	8.492	11.426	537.04	63.95	566.2	1828.4
6/6/2011	21:02:15	8.495	11.412	534.88	63.71	564.7	1906.8
6/6/2011	21:03:14	8.507	11.417	537.97	64.97	557.4	1638.3
6/6/2011	21:04:14	8.583	11.455	535.55	64.73	568	1861.8
6/6/2011	21:05:13	8.546	11.452	536.42	64.6	573.9	1982.2
6/6/2011	21:06:15	8.522	11.446	534.21	64.69	566	1618
6/6/2011	21:07:15	8.514	11.441	532.99	63.84	567.3	1820.6
6/6/2011	21:08:14	8.504	11.446	530.88	64	567.3	1772.7
6/6/2011	21:09:14	8.461	11.485	535.08	64.79	553.3	1596.4
6/6/2011	21:10:15	8.442	11.489	539.46	66.63	564.1	1886
6/6/2011	21:11:15	8.411	11.521	543.64	67.73	552.8	1968.6
6/6/2011	21:12:14	8.412	11.52	545.59	68.64	545.5	1998
6/6/2011	21:13:14	8.404	11.525	547.35	69.75	546.5	1706.4
6/6/2011	21:14:13	8.428	11.514	546.77	69.46	564.1	1835.3
6/6/2011	21:15:15	8.416	11.514	540.16	67.43	558.3	1961.4
6/6/2011	21:16:14	8.441	11.487	537.89	68.09	563.9	1919.8
6/6/2011	21:17:14	8.411	11.512	536.6	66.93	562.2	1664.5
Begin Traverse							
6/6/2011	21:18:14	8.468	11.468	540.47	68.45	576.9	1920.7
6/6/2011	21:19:15	8.408	11.512	540.19	67.92	557	1967
6/6/2011	21:20:15	8.425	11.498	545.28	69.8	558.5	1718.1
6/6/2011	21:21:14	8.459	11.476	541.93	68.66	570.1	1901.9
6/6/2011	21:22:14	8.444	11.486	538.03	67.11	562.1	1996.1
6/6/2011	21:23:13	8.441	11.487	540.41	67.91	564.2	1840.6
6/6/2011	21:24:15	8.458	11.476	543.82	68.83	561.4	1996.7
6/6/2011	21:25:14	8.489	11.447	536.29	66.92	573.9	1714
6/6/2011	21:26:14	8.442	11.479	538.31	66.69	557	1957.6
6/6/2011	21:27:13	8.47	11.465	543.24	68.7	561.8	1934.9
6/6/2011	21:28:15	8.465	11.471	544.34	68.75	573.4	1657.7
6/6/2011	21:29:15	8.477	11.457	540.28	68.05	564	1952.5
6/6/2011	21:30:14	8.461	11.467	541.15	67.71	562.2	1905.5
6/6/2011	21:31:14	8.476	11.46	541.36	67.78	563.8	1894.5
6/6/2011	21:32:15	8.479	11.454	538.74	66.58	570.9	1708.5
6/6/2011	21:33:15	8.471	11.465	542.03	67.94	571.1	1840.1
6/6/2011	21:34:14	8.448	11.482	542.13	67.69	560.1	1896.1
6/6/2011	21:35:14	8.469	11.468	546.44	69.18	573.2	1700.9
6/6/2011	21:36:15	8.445	11.485	543.49	68.2	566.2	1941.9

Final System Bias Check for Run 4 . STRATA Version 2.01

Operator: RMC Environmental, Inc.
 Plant Name: WM- West Side Landfill
 Location: Engine Testing
 Reference Cylinder Numbers

	Zero	Span
O2-1	XC019453B	CC58514
CO2-1	XC019453B	CC58514
CO-1	CC58514	CC38682
NOx-1	CC58514	CC186299
VOC-1	CC58514	CC157060
CH4-1	CC58514	ALM033374

Date/Time	6/6/2011 22:05:18 PASSED					
Analyte	O2-1	CO2-1	CO-1	NOx-1	VOC-1	CH4-1
Units	%	%	ppm	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00	0.00	0.00
Zero Cal	0.41	0.12	2.75	4.28	2.10	58.00
Zero Avg	0.57	0.16	0.05	10.67	6.60	7.80
Zero Bias%	0.70	0.20	0.30	2.60	0.40	1.00
Zero Drift%	-0.10	-0.40	0.00	0.10	0.10	0.10
Span Ref Cyl	12.56	9.98	499.40	115.60	500.40	2540.00
Span Cal	12.61	9.85	499.47	118.15	508.60	2520.30
Span Avg	12.62	9.68	498.24	120.22	501.20	2486.60
Span Bias%	0.10	0.90	0.10	0.80	0.70	0.70
Span Drift%	0.00	-1.20	0.20	1.10	0.10	-0.60
Ini Zero Avg	0.58	0.22	0.04	10.36	5.50	4.10
Ini Span Avg	12.62	9.89	496.10	117.58	500.00	2517.40
Run Avg	8.46	11.48	540.72	67.10	562.60	1858.20
Co	0.57	0.19	0.04	10.51	6.10	5.90
Cm	12.62	9.79	497.17	118.90	500.60	2502.00
Correct Avg	8.23	11.74	543.15	60.35	563.20	1863.70

6/6/2011	22:51:02	8.445	11.538	543.7	67.39	579.3	1949.1
6/6/2011	22:52:01	8.472	11.515	546.95	68.98	581.9	1966.2
6/6/2011	22:53:01	8.477	11.514	542.21	67.43	588.7	1907
6/6/2011	22:54:02	8.5	11.497	542.9	67.96	585.8	1979.1
6/6/2011	22:55:02	8.501	11.503	539.38	66.32	591.3	1989.7
6/6/2011	22:56:01	8.5	11.504	539.85	66.67	590.7	1931.8
6/6/2011	22:57:01	8.512	11.55	541.02	66.94	595.6	1629.3
6/6/2011	22:58:02	8.518	11.689	538.5	65.68	594.5	1972.2
6/6/2011	22:59:02	8.527	11.512	535.72	64.55	598	1974.1
6/6/2011	23:00:01	8.496	11.892	536.69	64.81	590.4	1947
6/6/2011	23:01:01	8.495	11.8	540.6	66.11	589.6	1862.2
6/6/2011	23:02:02	8.477	11.55	541.01	66.46	582.3	1977.2
6/6/2011	23:03:02	8.452	11.525	543.62	66.88	571.1	1969.6
6/6/2011	23:04:01	8.464	11.509	547.71	68.49	578.8	1973.7
6/6/2011	23:05:01	8.48	11.487	546.37	67.65	584	1982.1
6/6/2011	23:06:00	8.465	11.507	544.61	68.47	580.6	1879.2
6/6/2011	23:07:02	8.469	11.527	544.27	68.57	585.1	1915.1
6/6/2011	23:08:01	8.442	11.564	544.84	68.57	575.5	1961.1
6/6/2011	23:09:01	8.465	11.559	550.94	70.43	582	1934.3
6/6/2011	23:10:01	8.45	11.608	547.66	69.81	580.2	1614.7

Average of Test Run		O2-1	CO2-1	CO-1	NOx-1	VOC-1	CH4-1
		%	%	ppm	ppm	ppm	ppm
6/6/2011	23:10:01	8.463	11.534	543.12	67.75	589.9	1865.4

Test Run 5 End

Test Run 6 Begin. STRATA Version 2.01

Operator: RMC Environmental, Inc.

Plant Name: WM- West Side Landfill

Location: Engine Testing

		O2-1	CO2-1	CO-1	NOx-1	VOC-1	CH4-1
		%	%	ppm	ppm	ppm	ppm
Begin calculating run averages							
6/6/2011	23:26:11	8.62	11.715	541.64	63.6	578.5	2003.2
6/6/2011	23:27:10	8.588	11.658	545.23	66.97	591.1	2020.2
6/6/2011	23:28:09	8.622	11.64	540.34	66.17	585.3	1994.7
6/6/2011	23:29:09	8.881	11.615	543.01	67.62	585.5	1600
6/6/2011	23:30:11	8.88	11.58	541.98	67.24	598.7	1811.2
6/6/2011	23:31:10	8.738	11.575	537.34	66.24	599.1	1991.8
6/6/2011	23:32:10	8.79	11.596	541.22	66.49	609.9	1527.4
6/6/2011	23:33:09	8.697	11.588	539.09	66.05	596.9	1856.8
6/6/2011	23:34:11	8.719	11.571	540.96	66.28	599.7	1905.4
6/6/2011	23:35:10	8.669	11.553	536.42	65.15	599.8	1845.8
6/6/2011	23:36:10	8.695	11.504	536.29	64.38	614.9	1550.8
6/6/2011	23:37:09	8.64	11.514	526.5	60.56	603.1	1906.7
6/6/2011	23:38:11	8.537	11.54	535.77	63.3	559.1	1767.4
6/6/2011	23:39:10	8.489	11.528	545.21	66.62	552.5	1748.5
6/6/2011	23:40:10	8.479	11.505	553.49	68.28	550.9	1472.8
6/6/2011	23:41:09	8.524	11.452	540.48	64.9	576.9	1950.2
6/6/2011	23:42:11	8.448	11.518	540.34	64.38	553.9	1708.8
6/6/2011	23:43:10	8.457	11.51	546.39	66.53	556.4	1506.2
6/6/2011	23:44:10	8.443	11.516	547.32	67.11	551.8	1890.2
6/6/2011	23:45:09	8.418	11.551	546.09	66.65	561.1	1702.4
6/6/2011	23:46:09	8.436	11.546	550.75	68.5	565.3	1783.5
6/6/2011	23:47:11	8.422	11.576	545.24	66.85	563.2	1806.9
6/6/2011	23:48:10	8.421	11.569	550.71	68.68	550.5	1669.5
6/6/2011	23:49:10	8.453	11.544	546.26	67.16	560	1890.6
6/6/2011	23:50:09	8.451	11.553	541.45	65.95	563	1918.7
6/6/2011	23:51:11	8.455	11.557	544.1	67.08	561.7	1883.7
6/6/2011	23:52:10	8.456	11.555	541.65	66.33	557.5	2020.3
6/6/2011	23:53:10	8.438	11.572	542.51	65.64	547.3	2018.1
6/6/2011	23:54:09	8.428	11.584	544.12	65.75	547.4	2037
6/6/2011	23:55:11	8.44	11.578	547.79	67.23	549.2	1991.6
6/6/2011	23:56:10	8.454	11.575	546.11	67.63	551.8	1904.6
6/6/2011	23:57:10	8.473	11.58	542.78*	66.6	554	2044.4
6/6/2011	23:58:10	8.473	11.585	541.74	65.97	553.6	2029.3
6/6/2011	23:59:09	8.466	11.611	545.21	66.99	551.4	1991.9
6/7/2011	0:00:11	8.476	11.624	545.61	67.03	545	2042
6/7/2011	0:01:10	8.69	11.623	545.77	67.35	544.8	2053.3
6/7/2011	0:02:10	8.542	11.638	544.98	66.87	561	1636.3
6/7/2011	0:03:09	8.428	11.635	545.57	67.28	541.3	2013.5
6/7/2011	0:04:11	8.435	11.622	546.07	66.54	553.5	2046.4
6/7/2011	0:05:10	8.46	11.6	547.99	68.12	557.6	2021

Final System Bias Check for Run 6 . STRATA Version 2.01

Operator: RMC Environmental, Inc.
 Plant Name: WM- West Side Landfill
 Location: Engine Testing
 Reference Cylinder Numbers

	Zero	Span
O2-1	XC019453B	CC58514
CO2-1	XC019453B	CC58514
CO-1	CC58514	CC38682
NOx-1	CC58514	CC186299
VOC-1	CC58514	CC157060
CH4-1	CC58514	ALM033374

Date/Time	6/7/2011 0:32:36 PASSED					
Analyte	O2-1	CO2-1	CO-1	NOx-1	VOC-1	CH4-1
Units	%	%	ppm	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00	0.00	0.00
Zero Cal	0.41	0.12	2.75	4.28	2.10	58.00
Zero Avg	0.54	0.17	0.06	10.56	7.40	11.20
Zero Bias%	0.60	0.30	0.30	2.50	0.50	0.90
Zero Drift%	-0.10	0.00	0.00	-0.40	0.30	0.10
Span Ref Cyl	12.56	9.98	499.40	115.60	500.40	2540.00
Span Cal	12.61	9.85	499.47	118.15	508.60	2520.30
Span Avg	12.60	9.65	495.07	118.23	498.60	2346.60
Span Bias%	0.00	1.10	0.50	0.00	1.00	3.50
Span Drift%	-2.90	-1.00	0.50	0.80	-0.20	-2.90
Ini Zero Avg	0.57	0.17	0.06	11.64	4.70	6.60
Ini Span Avg	13.21	9.82	490.22	116.29	500.60	2491.90
Run Avg	8.51	11.60	543.46	66.26	566.20	1891.30
Co	0.55	0.17	0.06	11.10	6.00	8.90
Cm	12.91	9.73	492.65	117.26	499.60	2419.30
Correct Avg	8.09	11.93	550.92	60.06	567.90	1924.50

Initial System Bias Check for Run 7 . STRATA Version 2.01

Operator: RMC Environmental, Inc.
 Plant Name: WM- West Side Landfill
 Location: Engine Testing
 Reference Cylinder Numbers

	Zero	Span
O2-1	XC019453B	CC58514
CO2-1	XC019453B	CC58514
CO-1	CC58514	CC38682
NOx-1	CC58514	CC186299
VOC-1	CC58514	CC157060
CH4-1	CC58514	ALM033374

Date/Time	6/7/2011	7:59:15 PASSED				
Analyte	O2-1	CO2-1	CO-1	NOx-1	VOC-1	CH4-1
Units	%	%	ppm	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00	0.00	0.00
Zero Cal	0.02	0.14	1.72	4.12	0.90	7.90
Zero Avg	0.53	0.14	-0.05	10.13	4.00	20.80
Zero Bias%	2.40	0.00	0.20	2.40	0.30	0.30
Zero Drift%						
Span Ref Cyl	12.56	9.98	499.40	115.60	500.40	2540.00
Span Cal	12.59	9.75	496.48	117.74	494.80	2456.90
Span Avg	12.74	9.54	489.16	118.22	497.90	2356.30
Span Bias%	0.70	1.20	0.80	0.20	0.30	2.00
Span Drift%						

6/7/2011	8:40:07	8.098	11.646	669.31	93.34	485.8	1624.5
Begin Traverse							
6/7/2011	8:41:06	8.109	11.662	665.73	92.09	480.7	1575.8
6/7/2011	8:42:06	8.115	11.673	668.1	93.74	475.2	1758.7
6/7/2011	8:43:08	8.114	11.652	663.91	92.09	475.3	1399.6
6/7/2011	8:44:07	8.104	11.638	663.16	91.31	479.3	1585.7
6/7/2011	8:45:07	8.061	11.673	664.84	90.88	473.8	1427.3
6/7/2011	8:46:06	8.107	11.626	671.22	93.61	469.8	1764
6/7/2011	8:47:06	8.07	11.68	662.48	92.08	418.6	1180.3
6/7/2011	8:48:07	8.029	11.722	668.59	91.92	447.1	1583.2
6/7/2011	8:49:07	8.066	11.692	669.75	92.53	478.5	1704.8
6/7/2011	8:50:06	8.051	11.701	664.65	91.51	407.7	1336.2
6/7/2011	8:51:06	8.07	11.692	661.58	89.78	419.2	1372.8
6/7/2011	8:52:07	8.73	11.695	665.59	90.24	449.8	1625.9
6/7/2011	8:53:07	8.959	11.705	654.21	86.74	419.3	1347
6/7/2011	8:54:06	8.922	11.776	663.25	89.29	487.8	1774.9
6/7/2011	8:55:06	8.729	11.86	659.14	90.66	485.5	1731.9
6/7/2011	8:56:07	8.579	12.047	665.67	92.04	399.1	1187.9
6/7/2011	8:57:07	8.512	11.988	662.68	90.49	424.3	1388.9
6/7/2011	8:58:06	8.232	11.716	664.53	90.82	380.6	1129.5
6/7/2011	8:59:06	8.148	11.721	666.54	91.06	444.4	1588.2
6/7/2011	9:00:07	8.087	11.676	665.86	90.9	423.9	1507.4
Average of Test Run		O2-1	CO2-1	CO-1	NOx-1	VOC-1	CH4-1
		%	%	ppm	ppm	ppm	ppm
6/7/2011	9:00:07	8.231	11.747	664.38	90.96	466.2	1551.3
Test Run 7 End							

Test Run 8 Begin. STRATA Version 2.01

Operator: RMC Environmental, Inc.
 Plant Name: WM- West Side Landfill
 Location: Engine Testing

		O2-1	CO2-1	CO-1	NOx-1	VOC-1	CH4-1
		%	%	ppm	ppm	ppm	ppm
Begin calculating run averages							
6/7/2011	9:16:12	8.057	11.782	664.88	76.54	384.7	1221
6/7/2011	9:17:11	8.033	11.763	668.74	78.35	413.2	1241.9
6/7/2011	9:18:11	8.051	11.734	666.02	79.4	426	1070.7
6/7/2011	9:19:10	8.038	11.728	666.7	81.59	391.6	1189.1
6/7/2011	9:20:12	8.062	11.682	666.57	83.97	393.6	1308.7
6/7/2011	9:21:11	8.077	11.65	668.59	86.9	396.3	1287.9
6/7/2011	9:22:11	8.042	11.678	665.22	85.91	428	1403
6/7/2011	9:23:10	8.083	11.651	665.82	86.89	409.1	1420.9
6/7/2011	9:24:12	8.058	11.686	658.42	84.62	462.3	1622.4
6/7/2011	9:25:11	8.062	11.703	666.64	87.95	374	1240.9
6/7/2011	9:26:11	8.041	11.717	665.75	88.18	443.3	1247
6/7/2011	9:27:10	8.025	11.725	666.08	87.64	403.4	1136
6/7/2011	9:28:12	8.009	11.721	664.83	86.66	491.9	1663.6
6/7/2011	9:29:12	8.041	11.7	677.55	91.49	416.5	1296.9
6/7/2011	9:30:11	8.045	11.691	659.08	85.44	462.1	1601.7
6/7/2011	9:31:11	8.032	11.7	663.66	86.6	501.2	1581.6
6/7/2011	9:32:12	8.053	11.704	680.31	92.38	443.2	1196.4
6/7/2011	9:33:12	8.058	11.727	675.19	91.97	482	1510.8
6/7/2011	9:34:11	8.067	11.786	667.54	90.51	566.5	1762.8
6/7/2011	9:35:11	8.055	11.799	670.82	90.52	486.6	1409.8
6/7/2011	9:36:12	8.051	11.701	672.74	91	519.9	1346.8
6/7/2011	9:37:12	8.093	11.661	670.46	90.78	491.9	1639.3
6/7/2011	9:38:11	8.089	11.69	674.02	92.37	551.4	1702.5
6/7/2011	9:39:11	8.065	11.75	669.7	90.71	521	1611
6/7/2011	9:40:10	8.08	11.781	674.13	91.91	454	1375
6/7/2011	9:41:12	8.092	11.867	672.33	91.4	497.5	1543.6
6/7/2011	9:42:11	8.084	11.927	667.77	90.08	488.5	1399.7
6/7/2011	9:43:11	8.069	11.903	667.45	89.86	550	1579.6
6/7/2011	9:44:10	8.065	11.978	664.35	88.62	521	1463.9
6/7/2011	9:45:12	8.061	11.948	669.07	89.64	553.7	1573.3
6/7/2011	9:46:12	8.047	12.046	668.61	89.99	474.9	1623.5
6/7/2011	9:47:11	8.036	12.358	666.34	88.15	493.2	1629.3
6/7/2011	9:48:11	8.032	12.318	671.78	89.08	491.7	1678.1
6/7/2011	9:49:12	8.08	12.008	674.8	90.91	524.9	1672.7
6/7/2011	9:50:12	8.123	11.731	669.92	89.92	530.3	1499.8
6/7/2011	9:51:11	8.825	11.956	661.76	87.26	468.7	1481.1
6/7/2011	9:52:11	8.831	11.816	674.99	92.45	488.1	1579.8
6/7/2011	9:53:12	8.649	11.743	672	91.66	465.7	1531
6/7/2011	9:54:12	8.474	11.738	673.59	92.19	552.7	1827.9
6/7/2011	9:55:11	8.385	11.731	671.5	92.55	535.4	1900.5

Final System Bias Check for Run 8 . STRATA Version 2.01

Operator: RMC Environmental, Inc.
 Plant Name: WM- West Side Landfill
 Location: Engine Testing
 Reference Cylinder Numbers
 Zero Span
 O2-1 XC019453B CC58514
 CO2-1 XC019453B CC58514
 CO-1 CC58514 CC38682
 NOx-1 CC58514 CC186299
 VOC-1 CC58514 CC157060
 CH4-1 CC58514 ALM033374

Date/Time	6/7/2011 10:27:24 PASSED					
Analyte	O2-1	CO2-1	CO-1	NOx-1	VOC-1	CH4-1
Units	%	%	ppm	ppm	ppm	ppm
Zero Ref Cyl	0.00	0.00	0.00	0.00	0.00	0.00
Zero Cal	0.02	0.14	1.72	4.12	0.90	7.90
Zero Avg	0.46	0.17	-0.05	10.59	16.10	33.90
Zero Bias%	2.10	0.20	0.20	2.60	1.50	0.50
Zero Drift%	0.10	0.10	0.00	-0.30	0.60	0.20
Span Ref Cyl	12.56	9.98	499.40	115.60	500.40	2540.00
Span Cal	12.59	9.75	496.48	117.74	494.80	2456.90
Span Avg	12.55	9.98	487.83	124.68	500.40	2348.20
Span Bias%	0.20	1.30	1.00	2.80	0.60	2.20
Span Drift%	0.10	1.90	-0.30	0.80	-0.10	-1.80
Ini Zero Avg	0.45	0.16	-0.10	11.31	9.80	25.70
Ini Span Avg	12.53	9.64	490.61	122.77	501.90	2437.90
Run Avg	8.18	11.78	668.39	89.79	455.70	1541.70
Co	0.45	0.16	-0.08	10.95	12.90	29.80
Cm	12.54	9.81	489.22	123.73	501.10	2393.00
Correct Avg	8.03	12.03	682.26	81.32	453.80	1654.90

6/7/2011	11:11:18	8.079	11.619	658.94	89.98	446.3	1566.9
6/7/2011	11:12:19	8.099	11.599	656.24	89.16	446.7	1525.8
6/7/2011	11:13:19	8.091	11.602	648.92	86.36	446.7	1743.3
6/7/2011	11:14:18	8.044	11.657	654.99	88.81	445.5	1454.3
6/7/2011	11:15:18	8.071	11.639	660.95	90.9	445.7	1923.3
6/7/2011	11:16:19	8.033	11.698	661.64	91.93	444.7	1549
6/7/2011	11:17:19	8.061	11.715	662.27	91.68	445	919.6
6/7/2011	11:18:18	8.07	11.775	658.39	90.43	444.9	1774.4
6/7/2011	11:19:18	8.057	11.938	656.05	91.32	445.1	1854.7
6/7/2011	11:20:19	8.072	11.647	661.65	92.65	431.5	1653.4
6/7/2011	11:21:19	8.056	11.79	653.03	89.59	441.4	1524.4
6/7/2011	11:22:18	8.052	11.949	655.93	92.33	444.2	1524.1
6/7/2011	11:23:18	8.048	11.938	662.05	93.77	443.6	1525.1
6/7/2011	11:24:18	8.073	11.979	659.12	92.29	443.2	1526.1
6/7/2011	11:25:19	8.094	11.743	661.49	93.93	444.2	1224.3
6/7/2011	11:26:19	8.067	11.754	657.35	91.89	443.6	1262.2
6/7/2011	11:27:18	8.072	11.962	660.12	92.48	442.4	1563.4
6/7/2011	11:28:18	8.072	11.986	655.25	91.67	442.5	1555.7
6/7/2011	11:29:19	8.04	11.69	655.92	90.81	442.4	1591.5
6/7/2011	11:30:18	8.03	11.622	665.4	94.88	442.3	1536
Average of Test Run		O2-1	CO2-1	CO-1	NOx-1	VOC-1	CH4-1
		%	%	ppm	ppm	ppm	ppm
6/7/2011	11:30:18	8.139	11.706	662.14	89.17	449.3	1545.4

Test Run 9 End

APPENDIX C. TEST QA/ QC FORMS

Calibration Gas Certificates of Analysis

Meterbox Calibrations

Pitot Calibration

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number: E03NI78E15A56Y2	Reference Number: 54-124234423-2
Cylinder Number: CC58514	Cylinder Volume: 151 Cu.Ft.
Laboratory: ASG - Chicago - IL	Cylinder Pressure: 2015 PSIG
Analysis Date: Sep 14, 2010	Valve Outlet: 590

Expiration Date: Sep 14, 2013

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedure listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.
 Do Not Use This Cylinder below 150 psig, i.e. 1 Mega Pascal

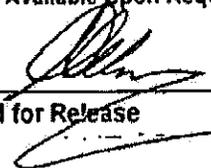
ANALYTICAL RESULTS				
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty
CARBON DIOXIDE	9.500 %	9.480 %	G1	+/- 1% NIST Traceable
OXYGEN	12.50 %	12.56 %	G1	+/- 1% NIST Traceable
NITROGEN	Balance			

CALIBRATION STANDARDS				
Type	Lot ID	Cylinder No	Concentration	Expiration Date
NTRM/CO2	98120809	CC59142	13.78% CARBON DIOXIDE/	Oct 02, 2012
NTRM/O2	981202	CC73607	14.84% OXYGEN/	Oct 02, 2012

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
(CO2-1)HORIBA VIA-510	NDIR	Sep 03, 2010
(O2-1)HORIBA MPA-510	Paramagnetic	Sep 03, 2010

Triad Data Available Upon Request

Notes:


 Approved for Release

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number: E03NI99E15A01Q4	Reference Number: 54-124193110-5
Cylinder Number: SG9150974BAL	Cylinder Volume: 144 Cu.Ft.
Laboratory: ASG - Chicago - IL	Cylinder Pressure: 2015 PSIG
Analysis Date: Oct 12, 2009	Valve Outlet: 660

Expiration Date: Oct 12, 2011

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.
 Do Not Use This Cylinder below 150 psig, i.e. 1 Mega Pascal

ANALYTICAL RESULTS				
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty
NITRIC OXIDE	115.0 PPM	115.6 PPM	G1	+/- 1% NIST Traceable
SULFUR DIOXIDE	115.0 PPM	114.5 PPM	G1	+/- 1% NIST Traceable
NITROGEN	Balance			

Total oxides of nitrogen	115.7 PPM	For Reference Only
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CALIBRATION STANDARDS				
Type	Lot ID	Cylinder No	Concentration	Expiration Date
NTRM/SO2	08061603	CC254551	247PPM SULFUR DIOXIDE/	Oct 15, 2012
NTRM/NO	1	CC286544	250.6PPM NITRIC OXIDE/NITROGEN	Feb 01, 2011

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Thermo 6700	FTIR	Sep 29, 2009
Thermo 6700	FTIR	Sep 29, 2009

Triad Data Available Upon Request

Notes:

QA Approval:

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number: E02NI99E15A0080 Reference Number: 54-124261820-2
 Cylinder Number: SG9175075BAL Cylinder Volume: 144 Cu.Ft.
 Laboratory: ASG - Chicago - IL Cylinder Pressure: 2015 PSIG
 Analysis Date: Apr 25, 2011 Valve Outlet: 350

Expiration Date: Apr 25, 2014

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.
 Do Not Use This Cylinder below 150 psig, i.e. 1 Mega Pascal

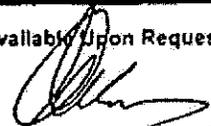
ANALYTICAL RESULTS				
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty
CARBON MONOXIDE	250.0 PPM	249.3 PPM	G1	+/- 1% NIST Traceable
NITROGEN	Balance			

CALIBRATION STANDARDS				
Type	Lot ID	Cylinder No	Concentration	Expiration Date
NTRM/CO	09060436	CC287245	501.3PPM CARBON MONOXIDE/NITROGEN	Feb 01, 2013

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
(CO-1)HORIBA VIA-510	NDIR	Apr 03, 2011

Triad Data Available Upon Request

Notes:



Approved for Release

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number: E02NI99E15A0502 Reference Number: 54-124218661-2
Cylinder Number: XC026080B Cylinder Volume: 144 Cu.Ft.
Laboratory: ASG - Chicago - IL Cylinder Pressure: 910 PSIG
Analysis Date: May 03, 2010 Valve Outlet: 350

Expiration Date: May 03, 2013

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.
Do Not Use This Cylinder below 150 psig i.e. 1 Mega Pascal

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty
CARBON MONOXIDE	890.0 PPM	898.8 PPM	G1	+/- 1% NIST Traceable
NITROGEN	Balance			

CALIBRATION STANDARDS

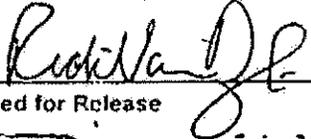
Type	Lot ID	Cylinder No	Concentration	Expiration Date
NTRM/CO	80604	CC255645	1002.4PPM CARBON MONOXIDE/NITROGEN	Apr 15, 2012

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
(CO-1)HORIBA VIA-510	NDIR	May 03, 2010

Triad Data Available Upon Request

Notes:



Approved for Release

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number: E02NI99E15A0932	Reference Number: 54-124190399-1
Cylinder Number: CC214403	Cylinder Volume: 144 Cu.Ft.
Laboratory: ASG - Chicago - IL	Cylinder Pressure: 2015 PSIG
Analysis Date: Sep 10, 2009	Valve Outlet: 350

Expiration Date: Sep 10, 2012

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.
Do Not Use This Cylinder below 150 psig, i.e. 1 Mega Pascal

ANALYTICAL RESULTS				
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty
PROPANE	500.0 PPM	499.6 PPM	G1	+/- 1% NIST Traceable
NITROGEN	Balance			

CALIBRATION STANDARDS				
Type	Lot ID	Cylinder No	Concentration	Expiration Date
NTRM/C3H8	1	XC003616B	453PPM PROPANE/AIR	Oct 02, 2011

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Nexus 470 AEP0000428	FTIR	Aug 21, 2009

Triad Data Available Upon Request

Notes:

Signature on file

QA Approval



AIR LIQUIDE

Air Liquide America
Specialty Gases LLC



Scott

COMPLIANCE CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083

Phone: 248-589-2950

Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: 57809-71-65000

Project No.: 05-82398-008

Customer

CLEAN AIR ENGINEERING
DON ALLEN
500 W. WOOD STREET
PALATINE IL 60067

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards, Procedure G-1; September, 1997.

Cylinder Number: ALM011625 Certification Date: 01Dec2009 Exp. Date: 30Nov2012
Cylinder Pressure***: 1925 PSIG

<u>COMPONENT</u>	<u>CERTIFIED CONCENTRATION (Moles)</u>		<u>ANALYTICAL ACCURACY**</u>	<u>TRACEABILITY</u>
METHANE	1,510	PPM	+/- 2%	NIST and VSL
AIR		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol procedures, September 1997.

REFERENCE STANDARD

<u>TYPE/SRM NO.</u>	<u>EXPIRATION DATE</u>	<u>CYLINDER NUMBER</u>	<u>CONCENTRATION</u>	<u>COMPONENT</u>
NTRM 1000	01Jul2011	K005406	1001. PPM	METHANE

INSTRUMENTATION

<u>INSTRUMENT/MODEL/SERIAL#</u>	<u>DATE LAST CALIBRATED</u>	<u>ANALYTICAL PRINCIPLE</u>
HORIBA/FIA-220/G05000JAS	01Dec2009	FLAME IONIZATION

APPROVED BY


ROBERT LESNIAK



Air Liquide America
Specialty Gases LLC



COMPLIANCE CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083

Phone: 248-589-2950

Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: 58028-71-65000

Project No.: 06-86284-019

Customer

CLEAN AIR ENGINEERING
DON ALLEN
500 W. WOOD STREET
PALATINE IL 60067

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM059469 Certification Date: 05Apr2010 Exp. Date: 04Apr2013
Cylinder Pressure***: 2000 PSIG

COMPONENT

METHANE
NITROGEN

CERTIFIED CONCENTRATION (Moles)

4,540 PPM
BALANCE

ANALYTICAL

ACCURACY**
+/- 2%

TRACEABILITY
NIST and VSL

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol procedures, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1000	01Jul2011	K005406	1001. PPM	METHANE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN/3400/7506	26Mar2010	TCD/FID

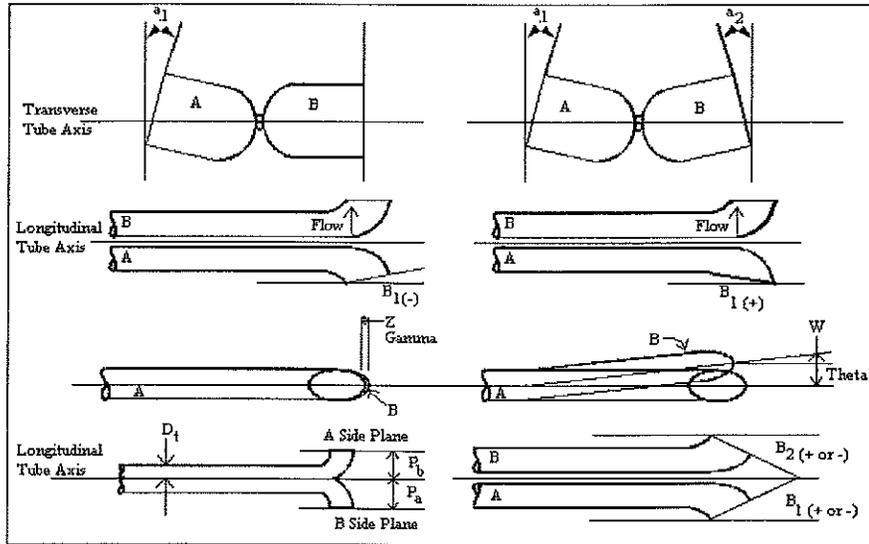
APPROVED BY:

ROBERT LESNIAK

S-TYPE PITOT TUBE INSPECTION

Project Number		2011-15969	
Pitot Tube Number		M2-36-C	
Level	Y	(Y/N)	PASS
Obstructions	N	(Y/N)	PASS
Damaged	N	(Y/N)	PASS
Type of material	SS		
$-10 < \alpha_1 < +10$	1.0	Degrees	PASS
$-10 < \alpha_2 < +10$	1.0	Degrees	PASS
$-5 < \beta_1 < +5$	0.0	Degrees	PASS
$-5 < \beta_2 < +5$	0.0	Degrees	PASS
z or Gamma	0.0	Degrees	
w or Theta	0.8	Degrees	
A	0.800	Inches	
$\{z = A \tan(\text{Gamma})\} < 0.125$	0.004	Inches	PASS
$\{w = A \tan(\text{Theta})\} < 0.03125$	0.013	Inches	PASS
$0.1875 < D_t < 0.375$	0.325	Inches	PASS
$1.05 D_t < P_a < 1.5 D_t$	0.395	Inches	PASS
$1.05 D_t < P_b < 1.5 D_t$	0.395	Inches	PASS
$ P_a - P_b < 0.0625$	0.000	Inches	PASS
Distance T/C set back > 2.0	2.500	Inches	PASS

- alpha 1 & alpha 2 are the angles of deflection that faces of the pitot tube are off from the perpendicular line of the traverse axis.
- Beta 1 & Beta 2 are the angles of deflection that faces of the pitot tube from the line parallel to the longitudinal tube axis.
- Gamma is the angle between the line between the two pitot tips and the theoretical level line between the tips.
- Theta is the angle between the two center lines of the pitot faces.
- A is the distance between the two pitot tips.
- z is the distance between the two lengths of the pitot tips.
- w is the distance between the two center lines of each of the pitot tubes.
- D_t is the outside diameter of the tubing used.
- P_a & P_b is the distance between the pitot tube face and the longitudinal tube axis.



COMMENTS: 3' S-Type Pitot w/ High Temp TC

I certify that this pitot tube meets or exceeds all specifications, criteria and/or applicable design features and is hereby assigned a pitot tube calibration factor of 0.84.

Signature: On-site RC

Date: 6/6/11

Cyclonic Flow Check

Source Name: WMI-Westside Landfill
City, State: Fort Worth, TX
Sampling Location: Engine #2

Date: 6/6/2011
Calc By: AMD
Project Number: 2011-15969

Check List
Perform Pitot tube Inspection: Yes Level and Zero Manometer: Yes

Data Summary					
Traverse Points	Pt.No.	Angle		Pt.No.	% of Dia
	1	2		13	5
2	6	14	5		
3	4	15	3		
4	5	16	2		
5	6	17			
6	4	18			
7	4	19			
8	3	20			
9	3	21			
10	4	22			
11	6	23			
12	5	24			

Results		
Average Angle:	4.1875	Acceptable
CFR 40 Part 60; App A, Method 1 Section 2.4 Limit:	20	

NO₂-NO CONVERSION EFFICIENCY

RMCEInc-Air Monitoring Division

Manufacture/ Model: TECO 42i-HL
Serial Number: 42iHL-ANSBPCC

Instrument Span: 250
Date Of Test: 6/6/11

RESULTS	
Peak response recorded during converter efficiency test:	50.38 ppm
Response recorded at the end of the 30-minute test:	50.11 ppm
Percent decrease from the peak response:	0.54%
Converter Efficiency:	99.46%

SPECIFICATIONS (EPA METHOD 7E): RESPONSE AT 30 MINUTES MUST NOT DECREASE BY MORE THAN 2% OF THE PEAK RESPONSE VALUE.

NO₂-NO CONVERTER EFFICIENCY TEST PROCEDURES

RMCEInc-AMD followed the manufacturer's recommended set-up procedures contained in the analyzer manual. After the initial set-up procedures were completed, the electronics of the monitor were adjusted according to the manufacturer's guidelines. The monitor was then calibrated by flowing NO calibration gases into the instrument. A calibration gas was then diluted (1:1) with purified compressed air. The gas mixture was routed through a manifold into a Tedlar bag, which was previously leak tested and evacuated. This arrangement afforded sufficient volume to allow the sampling system to operate for the required 30 minutes. Immediately after the bag was filled, the manifold was connected to the sampling system. The system was turned on and the analyzer response was recorded on a data acquisition system. The one minute averages from the data acquisition system was analyzed for the peak response and the response at the end of the 30-minute sampling period.

R 6/6/11

APPENDIX D. PROCESS DATA

PROCESS DATA FOR LFG ENGINES 1-3

Company: Westside Landfill
Source: Engines 1 & 2

Engine Plant

Date: 6/6/2011

Start Time		KW	Fuel Flow	Air Flow	BTU	CH4 %	CO2 %	O2 %	ENGINE #
915	Run 1	1609	528	4381	557	54.8	39.9	0.9	1
930		1629	525	4219	557				1
945		1595	526	4376	557				1
1000		1605	524	4287	557				1
1015		1615	523	4335	557				1
1030	Run 2	1613	509	4201	565				55.7
1045		1609	513	4314	565	1			
1100		1586	493	4252	565	1			
1115		1602	518	4371	565	1			
1130		1613	502	4305	565	1			
1145	Run 3	1617	504	4208	572	56.4	41.0	0.4	
1200		1606	507	4325	572				1
1215		1598	499	4376	572				1
1230		1608	504	4291	572				1
1245		1604	506	4321	572				1
AVERAGE		1607	512	4304	565				55.7
2100	Run 1	1621	521	4401	546	53.5	39.1	1.3	2
2115		1642	530	4398	546				2
2130		1612	539	4390	546				2
2145		1603	528	4384	546				2
2200		1610	542	4291	546				2
2215	Run 2	1608	528	4154	539				53.2
2230		1591	531	4219	539	2			
2245		1634	554	4353	539	2			
2300		1621	549	4260	539	2			
2315		1630	547	4349	539	2			
2330	Run 3	1600	538	4256	539	53.1	38.6	1.4	
2345		1598	542	4319	539				2
2400		1608	546	4371	539				2
2415		1585	540	4292	539				2
2430		1616	543	4318	539				2
AVERAGE		1612	539	4317	541				53.3

Company: Westside Landfill
Source: Engine #3

Engine Plant

Date: 6/7/2011

Start Time		KW	Fuel Flow	Air Flow	BTU	CH4 %	CO2 %	O2 %	ENGINE #
800	Run 1	1624	551	4242	535	52.7	38.6	1.6	3
815		1630	548	4358	535				3
830		1598	537	4211	535				3
845		1601	528	4231	535				3
900		1595	541	4233	535				3
915	Run 2	1591	546	4218	536				52.8
930		1598	541	4267	536	3			
945		1596	545	4216	536	3			
1000		1618	539	4232	536	3			
1015		1615	548	4304	536	3			
1030	Run 3	1598	534	4173	536	52.8	38.6	1.5	
1045		1597	541	4219	536				3
1100		1595	531	4237	536				3
1115		1576	537	4251	536				3
1130		1592	539	4228	536				3
AVERAGE		1602	540	4241	536				52.8



CORE LABORATORIES

201 Deerwood Glen Dr
Deer Park, TX 77536
281-478-1300

RMC Environmental Inc
Rachel Chleborowicz
9226 N 2nd Street
Machesney Park, IL 61115

Report Number : 57801-111825
Date Reported: 6/20/2011
Date Received: 6/15/2011

Analytical Report

Sample No. 111825-002 Sample ID Raw LFG Eng # 2

Date Sampled 6/6/2011 11:15:0

Test	Result	Units	Method	Date	Analyst
Ultimate Gas Analysis					
Hydrogen	0.19	Mol %	ASTM D-1945	6/17/2011	KTN
Oxygen	1.34	Mol %			
Nitrogen	5.81	Mol %			
Carbon Dioxide	37.87	Mol %			
Methane	54.79	Mol %			
Ethane	<0.01	Mol %			
Propane	<0.01	Mol %			
Isobutane	<0.01	Mol %			
n-Butane	<0.01	Mol %			
Isopentane	<0.01	Mol %			
n-Pentane	<0.01	Mol %			
Hexanes Plus	<0.01	Mol %			
Total	100.00	Mol %			
Molecular Weight	27.5	Kg/Kg-mole	ASTM D-3588		
Molar Mass Ratio	0.95005				
Relative Density	0.95244				
Compressibility Factor	0.99708				
Gross Heating Value (Dry)	554.0	BTU/CF (Ideal)			
Gross Heating Value (Dry)	555.6	BTU/CF (Real)			
Net Heating Value (Dry)	498.8	BTU/CF (Ideal)			
Net Heating Value (Dry)	500.2	BTU/CF (Real)			
Pressure Base	14.696	psia			
Carbon Content	40.44	WT %	ASTM D-1945		
Hydrogen Content	8.04	WT %			
Oxygen Content	45.61	WT %			
Nitrogen Content	5.91	WT %			
Sulfur Content	<0.01	WT %			
F Factor @ 20C & 29.92 in.	9292	dscf/mmBTU			

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Rachel Chleborowicz
9226 N 2nd Street
Machesney Park, IL 61115

Report Number : 57801-111825
Date Reported: 6/20/2011
Date Received: 6/15/2011

Analytical Report

Sample No. 111825-003 Sample ID Raw LFG Eng # 3 Date Sampled 6/7/2011 9:45:00

Test	Result	Units	Method	Date	Analyst
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Approved By: _____

M. Jean Waits

The analytical results, opinions or interpretations contained in this report are based upon information and material supplied by the client for whose exclusive and confidential use this report has been made. The analytical results, opinions or interpretations expressed represent the best judgement of Core Laboratories. Core Laboratories, however, makes no warrant or representation, express or implied, of any type, and expressly disclaims same as to the productivity, proper operation or profitability of any oil, gas, or other mineral property, well or sand in conjunction with which such report is used or relied upon for any reason whatsoever. This report shall not be reproduced, in whole or in part, without the approval of Core Laboratories.

APPENDIX E. RESUMES OF TEST PERSONNEL

Rachel Chleborowicz-QSTI

Senior Technical Staff

Primary Role: Sr. Project Manager

Other Role(s): Source Testing
Ambient Monitoring
Laboratory Analysis
Emissions Factors Development
Regulatory Support
Data Analysis

Firm: RMC Environmental, Inc.

Level: Professional Level 4

Experience: 20 years

Education: BS, 1990, Biology and Chemistry,
UNC-Chapel Hill

QSTI Certification - 2009

Basis for Selection:

- Currently Sr. Project Manager on confidential clients' project to characterize air emissions from landfill gas engines around the country.
- Served as Sr. Program Manager on over 1250 compliance and source emissions tests encompassing over 12 different source categories.
- Managed more than 100 projects conducted to evaluate applicability of current AP-42 factors.

Ms. Chleborowicz has specialized in source testing and ambient air monitoring for over 20 years. She is responsible for administrative and technical management of RMC Environmental, Inc., a woman owned source testing company headquartered in Chicago, Illinois. Her experience on over 1000 projects for private clients through out the country and Canada includes developing potential air emissions and air pollution emission inventories, conducting compliance assessments, preparing operating permit applications, supporting regulatory development, evaluating regulatory applicability, and performing QA/QC activities for air quality projects.

Relevant Experience:

Source Testing

Evaluated emissions from landfill gas engines, Private Clients. Conducting emissions tests at numerous LFG plants around the US to quantify controlled and uncontrolled emissions as well as determined the destruction efficiencies for combined and individual HAPs.

Evaluated Emissions from Glass Bead Production, Private Client. Conducted testing of total particulate, PM 10 and PM 2.5 emissions from a glass bead production facility – this facility makes the glass beads added to paints to give them their reflective properties. Prepared Site-Specific Test Plans and a Quality Assurance Project Plan (QAPP), field testing, laboratory analyses, data reduction and report preparation.

Evaluated Emissions from Gas turbines, Private Clients. Conducted testing of formaldehyde, benzene and other HAPS emissions from newly installed gas turbines comparing analytical results from EPA Method 0030, the “Chilled Impinger Method” from NCASI, TO-12, TO-15, EPA Method 18 and EPA Method 25A. Prepared Site-Specific Test Plans, field testing, laboratory analyses, data reduction and report preparation.

Evaluated Compliance of Air Emissions from 23 dust collectors, Private Client. Evaluated air emissions from a newly built utility with almost 23 individual dust collectors. Tested these collectors under maximum and minimum production to determine where the manufacturer and consultant varied on the permitted limits. Developed a test protocol acceptable to the regulatory agency and assisted the regulatory agency in calculating applicable and attainable permit limits for the facility.

Development of General Work Plans, and Site-Specific Test Plans (SSTPs), Private Clients. Prepared more than 750 work plans, for clients, ranging from single, routine compliance test programs to complex startups. Prepared more than 225 SSTPs, including projects for clients that included FTIRS, ammonia testing, ambient monitoring and on-site GC/MS.

Andrew McDermand

Team Leader

Primary Role: Source Testing

Other Role(s): Ambient Monitoring
Laboratory Analysis
Data Analysis

Firm: RMC Environmental, Inc.

Level: Technical Level 2

Experience: 5 years

Education: AS, 2003, Biology, McHenry
County College

Basis for Selection:

- **Currently Assistant Project Manager for Private Client – offset and gravuere printing process for VOC/HAPS and emissions inventory.**
- **Served as Program Manager on over 250 compliance and source emissions tests encompassing over 12 different source categories.**
- **Managed more than 25 projects conducted to evaluate applicability of current AP-42 factors.**

Mr. McDermand has specialized in source testing and ambient air monitoring for over 5 years. He is responsible for overseeing the technical management and source-testing personnel of RMC Environmental, Inc., a woman owned source testing company headquartered in Chicago, Illinois. His experience on over 700 projects for private clients through out the country and Canada includes developing potential air emissions and air pollution emission inventories, conducting compliance assessments, supporting regulatory development, evaluating regulatory applicability, and performing QA/QC activities for air quality projects.

Relevant Experience:

Source Testing

Evaluating VOC / HAPs emissions from Offset and Gravuere Printing Presses, Private Client. Conducting emissions tests at 10 different printing facilities / plants to quantify controlled and uncontrolled emissions as well as determined the destruction efficiencies for individual total VOCs HAPs. Assisting with the optimization of oxidizers associated with these presses to minimize the amount of wasted natural gas thereby lowering the costs associated with running these oxidizers and minimize the Total VOC and HAPS output.

Evaluated Emissions from Glass Bead Production, Private Client. Conducted testing of total particulate, PM 10 and PM 2.5 emissions from a glass bead production facility – this facility makes the glass beads added to paints to give them their reflective properties.

Evaluated Emissions from Engines & Gas turbines, Private Client. Conducted testing of formaldehyde, emissions from eight newly installed gas turbines comparing analytical results from EPA method 0030 and the “Chilled Impinger Method” from NCASI. Prepared Site-Specific Test Plans, field testing, laboratory analyses, data reduction and report preparation.

Evaluated Compliance of Air Emissions from 23 dust collectors, Private Client. Evaluated air emissions from a newly built utility with almost 23 individual dust collectors. Tested these collectors under maximum and minimum production to determine where the manufacturer and consultant varied on the permitted limits. Developed a test protocol acceptable to the regulatory agency and assisted the regulatory agency in calculating applicable and attainable permit limits for the facility.

Development of General Work Plans, and Site-Specific Test Plans (SSTPs), Private Clients. Prepared more than 100 work plans, for clients, ranging from single, routine compliance test programs to complex startups. Prepared more than 50 SSTPs, including projects for clients that included FTIRS, ammonia testing, ambient monitoring and on-site GC/MS.